FIG. 1

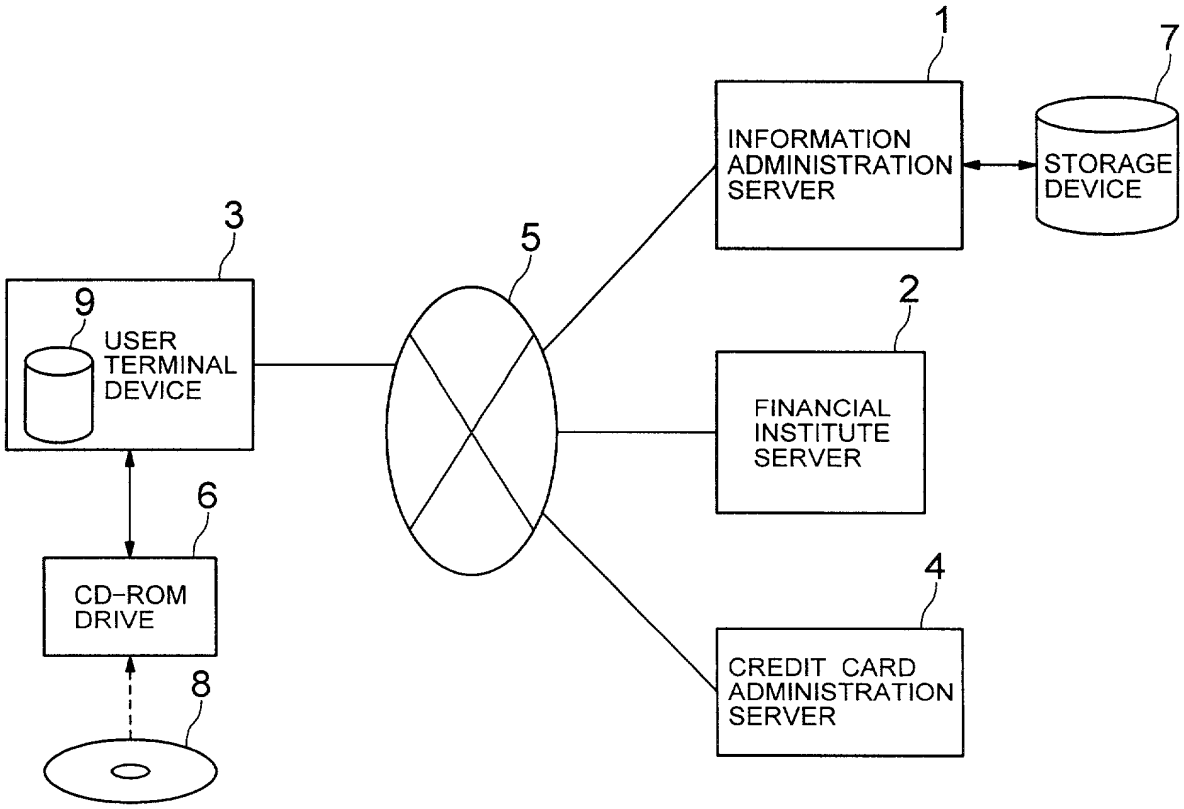

1
7
INFORMATION ADMINISTRATION SERVER
STORAGE DEVICE
3
5
9
USER TERMINAL DEVICE
2
FINANCIAL INSTITUTE SERVER
6
CD-ROM DRIVE
4
CREDIT CARD ADMINISTRATION SERVER
8

FIG. 2

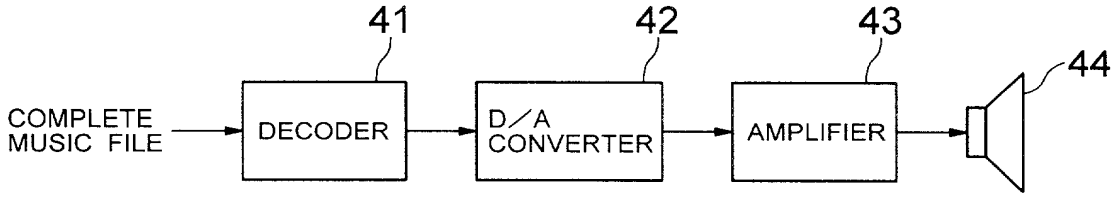

41
42
43
44
COMPLETE MUSIC FILE
DECODER
D/A CONVERTER
AMPLIFIER

FIG. 3

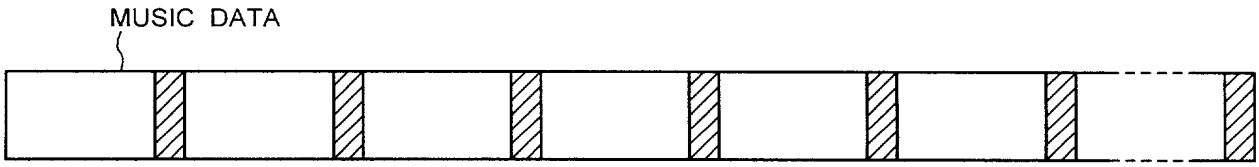


FIG. 4

FIG. 5

FIG. 6

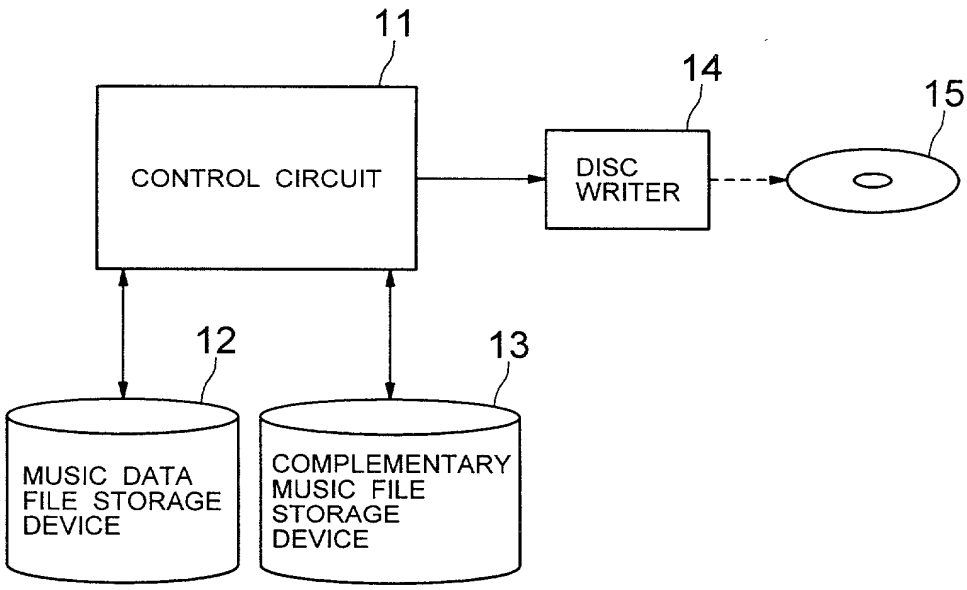

11
14
15
CONTROL CIRCUIT
DISC WRITER
12
13
MUSIC DATA FILE STORAGE DEVICE
COMPLEMENTARY MUSIC FILE STORAGE DEVICE

FIG. 7

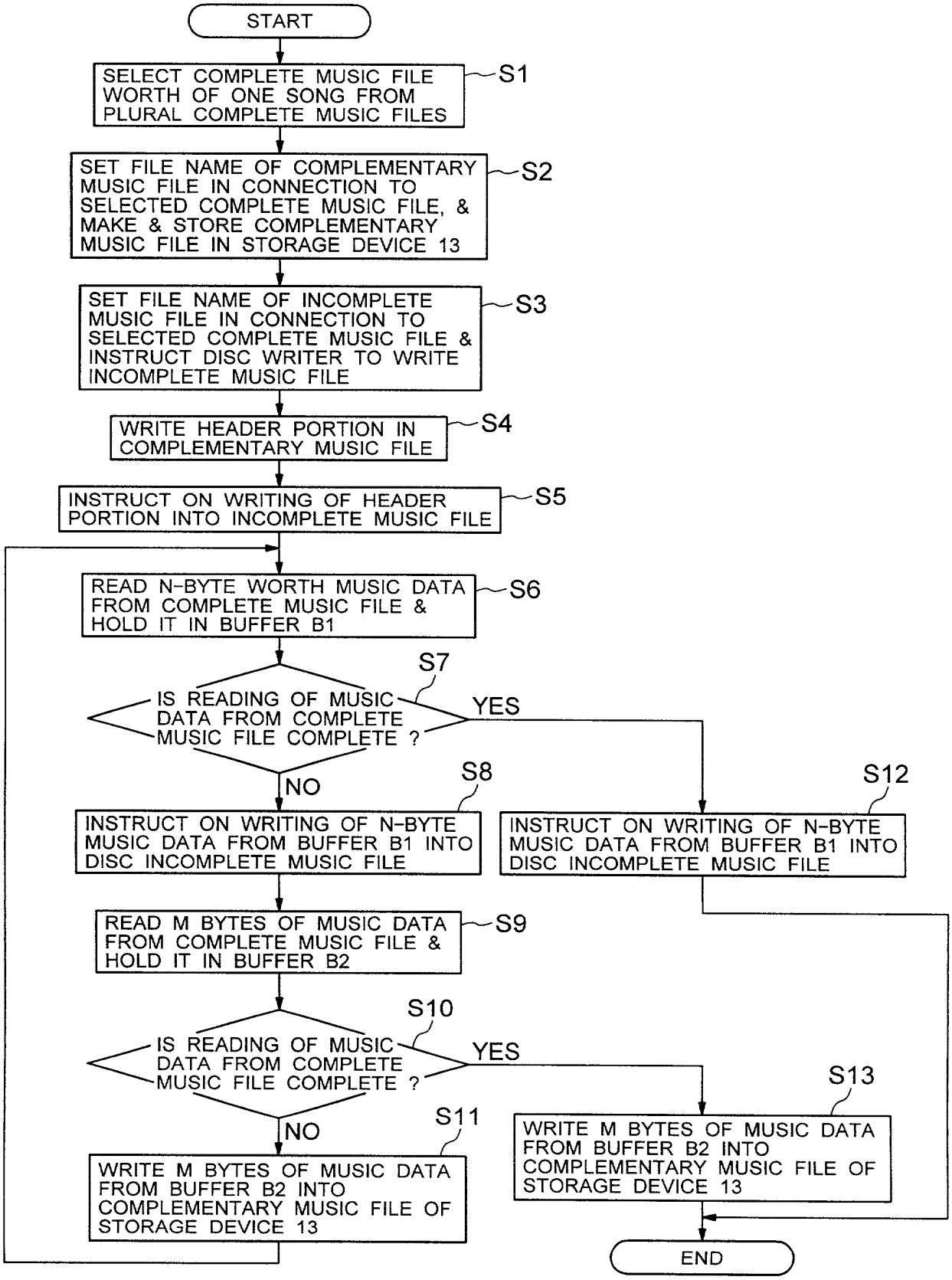

START
SELECT COMPLETE MUSIC FILE WORTH OF ONE SONG FROM PLURAL COMPLETE MUSIC FILES
S1
SET FILE NAME OF COMPLEMENTARY MUSIC FILE IN CONNECTION TO SELECTED COMPLETE MUSIC FILE, & MAKE & STORE COMPLEMENTARY MUSIC FILE IN STORAGE DEVICE 13
S2
SET FILE NAME OF INCOMPLETE MUSIC FILE IN CONNECTION TO SELECTED COMPLETE MUSIC FILE & INSTRUCT DISC WRITER TO WRITE INCOMPLETE MUSIC FILE
S3
WRITE HEADER PORTION IN COMPLEMENTARY MUSIC FILE
S4
INSTRUCT ON WRITING OF HEADER PORTION INTO INCOMPLETE MUSIC FILE
S5
READ N-BYTE WORTH MUSIC DATA FROM COMPLETE MUSIC FILE & HOLD IT IN BUFFER B1
S6
S7
IS READING OF MUSIC DATA FROM COMPLETE MUSIC FILE COMPLETE ?
YES
NO
S8
INSTRUCT ON WRITING OF N-BYTE MUSIC DATA FROM BUFFER B1 INTO DISC INCOMPLETE MUSIC FILE
S12
INSTRUCT ON WRITING OF N-BYTE MUSIC DATA FROM BUFFER B1 INTO DISC INCOMPLETE MUSIC FILE
READ M BYTES OF MUSIC DATA FROM COMPLETE MUSIC FILE & HOLD IT IN BUFFER B2
S9
S10
IS READING OF MUSIC DATA FROM COMPLETE MUSIC FILE COMPLETE ?
YES
NO
S11
WRITE M BYTES OF MUSIC DATA FROM BUFFER B2 INTO COMPLEMENTARY MUSIC FILE OF STORAGE DEVICE 13
S13
WRITE M BYTES OF MUSIC DATA FROM BUFFER B2 INTO COMPLEMENTARY MUSIC FILE OF STORAGE DEVICE 13
END

FIG. 8

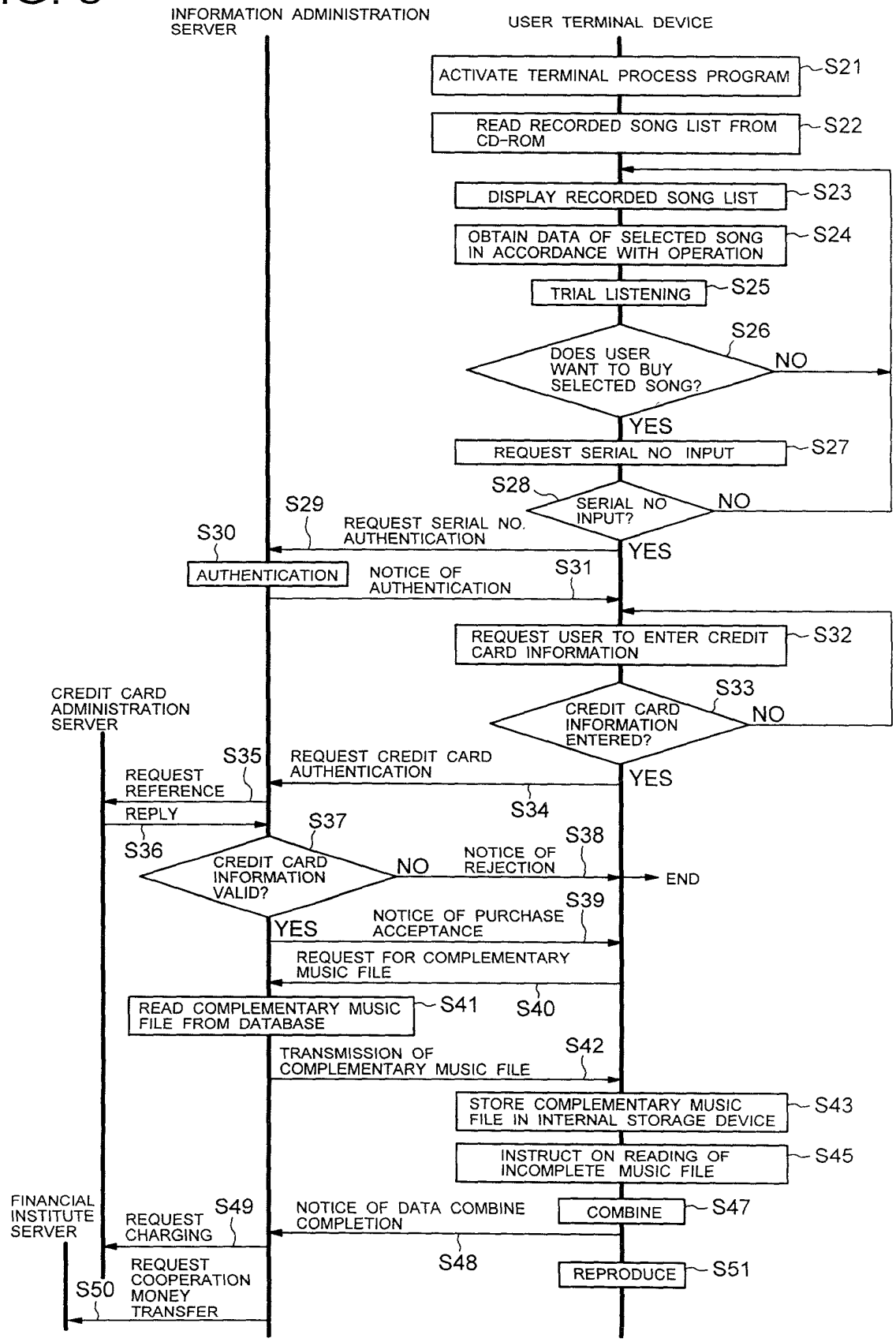

INFORMATION ADMINISTRATION SERVER
USER TERMINAL DEVICE
ACTIVATE TERMINAL PROCESS PROGRAM
S21
READ RECORDED SONG LIST FROM CD-ROM
S22
DISPLAY RECORDED SONG LIST
S23
OBTAIN DATA OF SELECTED SONG IN ACCORDANCE WITH OPERATION
S24
TRIAL LISTENING
S25
S26
DOES USER WANT TO BUY SELECTED SONG?
NO
YES
REQUEST SERIAL NO INPUT
S27
S28
SERIAL NO INPUT?
NO
YES
S29
REQUEST SERIAL NO. AUTHENTICATION
S30
AUTHENTICATION
NOTICE OF AUTHENTICATION
S31
REQUEST USER TO ENTER CREDIT CARD INFORMATION
S32
CREDIT CARD ADMINISTRATION SERVER
S33
CREDIT CARD INFORMATION ENTERED?
NO
YES
S35
REQUEST REFERENCE
REQUEST CREDIT CARD AUTHENTICATION
S34
REPLY
S36
S37
CREDIT CARD INFORMATION VALID?
NO
S38
NOTICE OF REJECTION
END
YES
S39
NOTICE OF PURCHASE ACCEPTANCE
REQUEST FOR COMPLEMENTARY MUSIC FILE
S40
READ COMPLEMENTARY MUSIC FILE FROM DATABASE
S41
S42
TRANSMISSION OF COMPLEMENTARY MUSIC FILE
STORE COMPLEMENTARY MUSIC FILE IN INTERNAL STORAGE DEVICE
S43
INSTRUCT ON READING OF INCOMPLETE MUSIC FILE
S45
FINANCIAL INSTITUTE SERVER
S49
REQUEST CHARGING
NOTICE OF DATA COMBINE COMPLETION
COMBINE
S47
S48
REQUEST COOPERATION MONEY TRANSFER
S50
REPRODUCE
S51

FIG. 9

SERIAL NO.	CD-ROM NO.	COMPLEMENTARY MUSIC FILE	DISTRIBUTION SOURCE
000001 ⋮ 005000	DISC A	Fsup1 ⋮ Fsup20	RECORD STORE A (BANK ACCOUNT NO. XXXXX)
005001 ⋮ 010000	DISC A	Fsup1 ⋮ Fsup20	RECORD STORE B (BANK ACCOUNT NO. YYYYY)
010001 ⋮ 015000	DISC B	Fsup21 ⋮ Fsup40	COMPUTER SHOP A (BANK ACCOUNT NO. ZZZZZ)
015001 ⋮ 020000	DISC B	Fsup21 ⋮ Fsup40	RECORD STORE A (BANK ACCOUNT NO. XXXXX)

FIG. 10

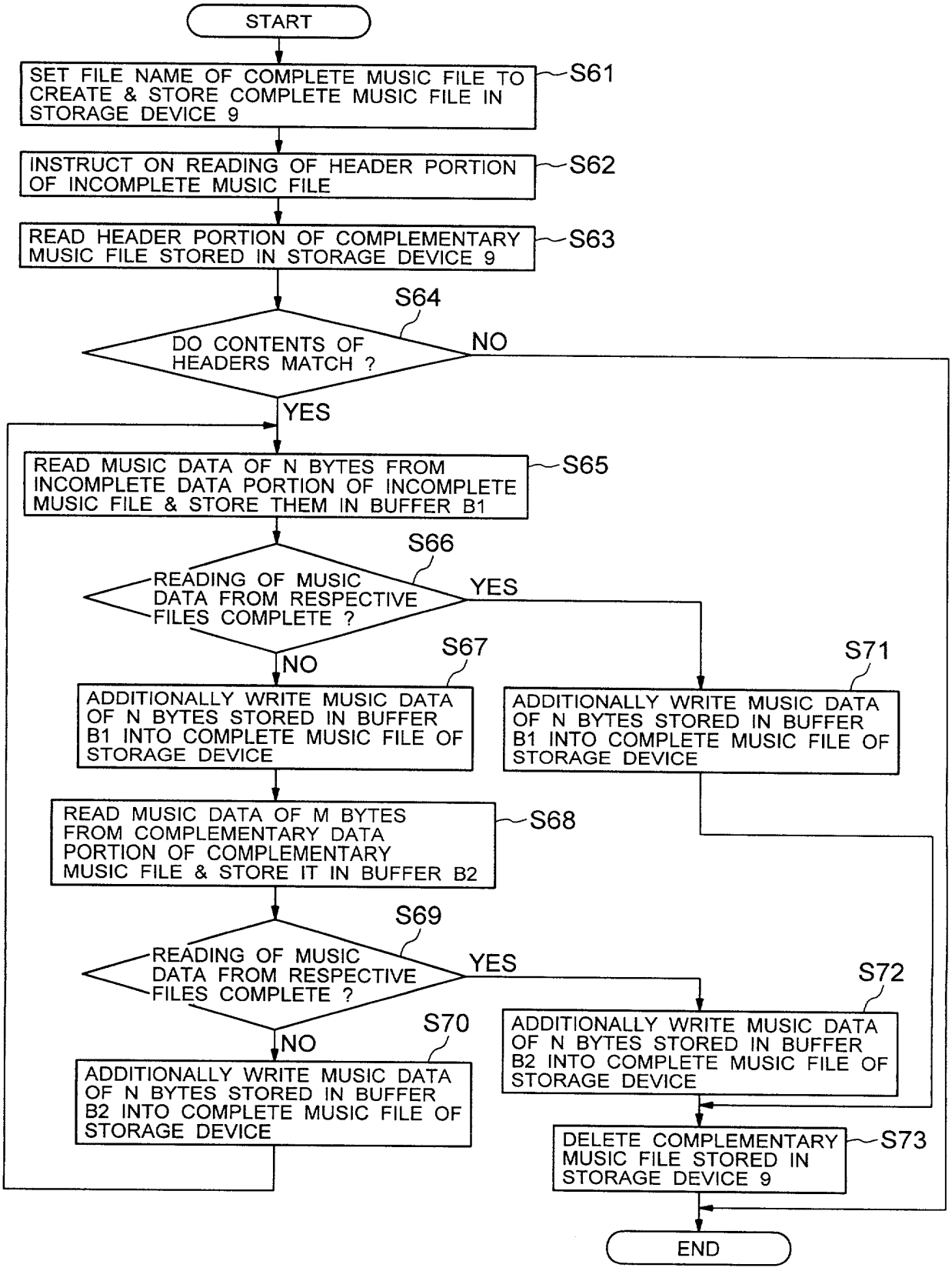

START
SET FILE NAME OF COMPLETE MUSIC FILE TO CREATE & STORE COMPLETE MUSIC FILE IN STORAGE DEVICE 9
S61
INSTRUCT ON READING OF HEADER PORTION OF INCOMPLETE MUSIC FILE
S62
READ HEADER PORTION OF COMPLEMENTARY MUSIC FILE STORED IN STORAGE DEVICE 9
S63
S64
DO CONTENTS OF HEADERS MATCH ?
NO
YES
READ MUSIC DATA OF N BYTES FROM INCOMPLETE DATA PORTION OF INCOMPLETE MUSIC FILE & STORE THEM IN BUFFER B1
S65
S66
READING OF MUSIC DATA FROM RESPECTIVE FILES COMPLETE ?
YES
NO
S67
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO COMPLETE MUSIC FILE OF STORAGE DEVICE
S71
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO COMPLETE MUSIC FILE OF STORAGE DEVICE
READ MUSIC DATA OF M BYTES FROM COMPLEMENTARY DATA PORTION OF COMPLEMENTARY MUSIC FILE & STORE IT IN BUFFER B2
S68
S69
READING OF MUSIC DATA FROM RESPECTIVE FILES COMPLETE ?
YES
NO
S70
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B2 INTO COMPLETE MUSIC FILE OF STORAGE DEVICE
S72
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B2 INTO COMPLETE MUSIC FILE OF STORAGE DEVICE
DELETE COMPLEMENTARY MUSIC FILE STORED IN STORAGE DEVICE 9
S73
END

FIG. 11

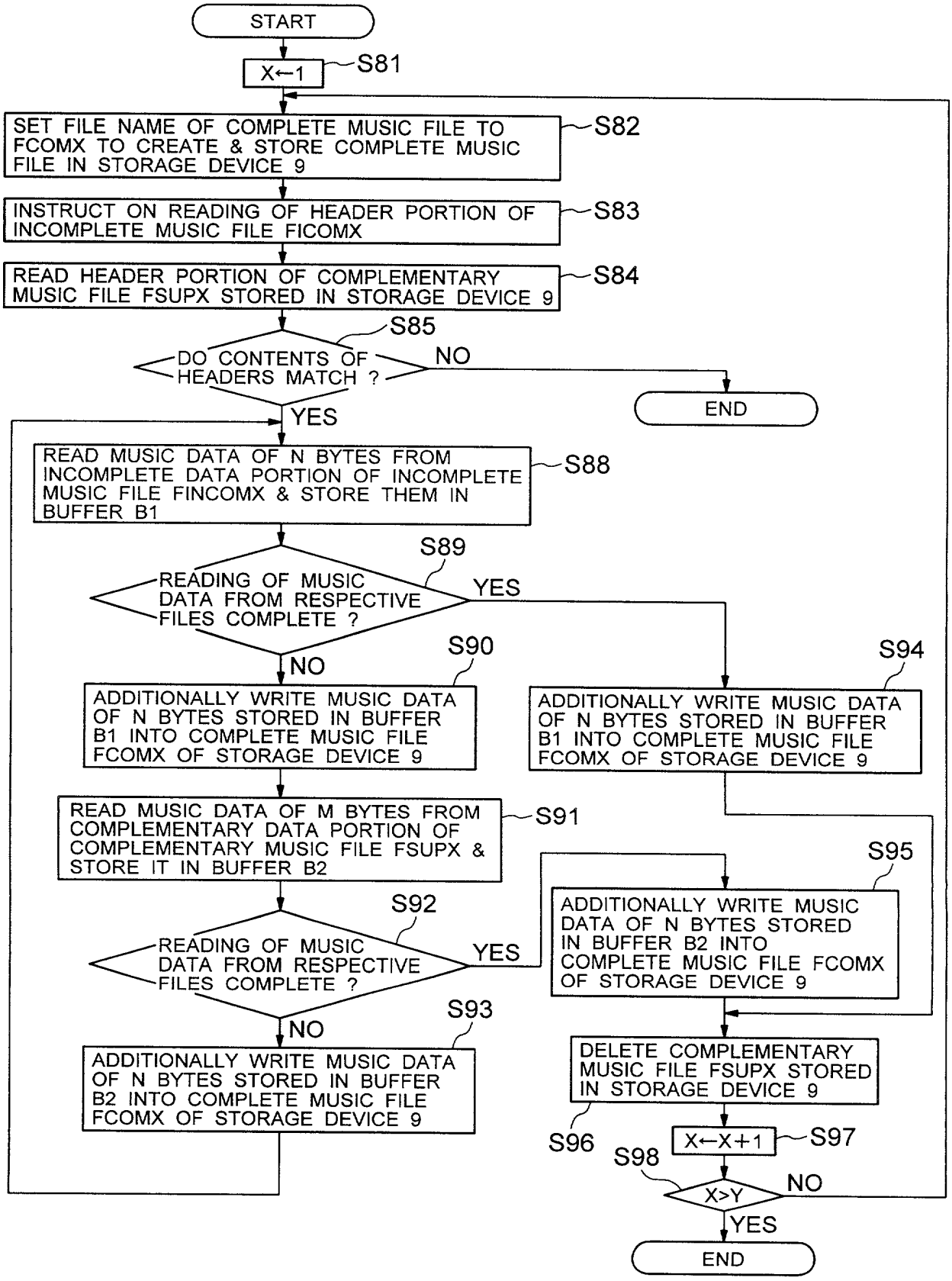

START
X←1
S81
SET FILE NAME OF COMPLETE MUSIC FILE TO FCOMX TO CREATE & STORE COMPLETE MUSIC FILE IN STORAGE DEVICE 9
S82
INSTRUCT ON READING OF HEADER PORTION OF INCOMPLETE MUSIC FILE FICOMX
S83
READ HEADER PORTION OF COMPLEMENTARY MUSIC FILE FSUPX STORED IN STORAGE DEVICE 9
S84
S85
DO CONTENTS OF HEADERS MATCH ?
NO
END
YES
READ MUSIC DATA OF N BYTES FROM INCOMPLETE DATA PORTION OF INCOMPLETE MUSIC FILE FINCOMX & STORE THEM IN BUFFER B1
S88
S89
READING OF MUSIC DATA FROM RESPECTIVE FILES COMPLETE ?
YES
NO
S90
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO COMPLETE MUSIC FILE FCOMX OF STORAGE DEVICE 9
S94
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO COMPLETE MUSIC FILE FCOMX OF STORAGE DEVICE 9
READ MUSIC DATA OF M BYTES FROM COMPLEMENTARY DATA PORTION OF COMPLEMENTARY MUSIC FILE FSUPX & STORE IT IN BUFFER B2
S91
S95
S92
READING OF MUSIC DATA FROM RESPECTIVE FILES COMPLETE ?
YES
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B2 INTO COMPLETE MUSIC FILE FCOMX OF STORAGE DEVICE 9
NO
S93
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B2 INTO COMPLETE MUSIC FILE FCOMX OF STORAGE DEVICE 9
DELETE COMPLEMENTARY MUSIC FILE FSUPX STORED IN STORAGE DEVICE 9
S96
X←X+1
S97
S98
X>Y
NO
YES
END

FIG. 12

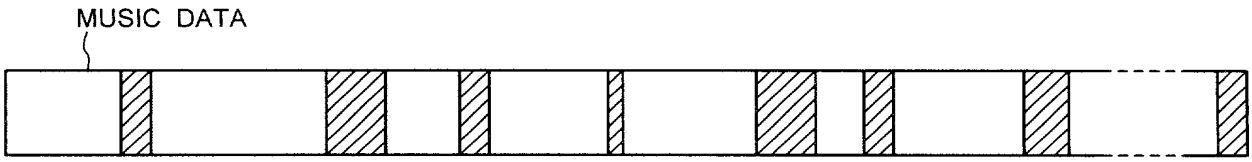


FIG. 13

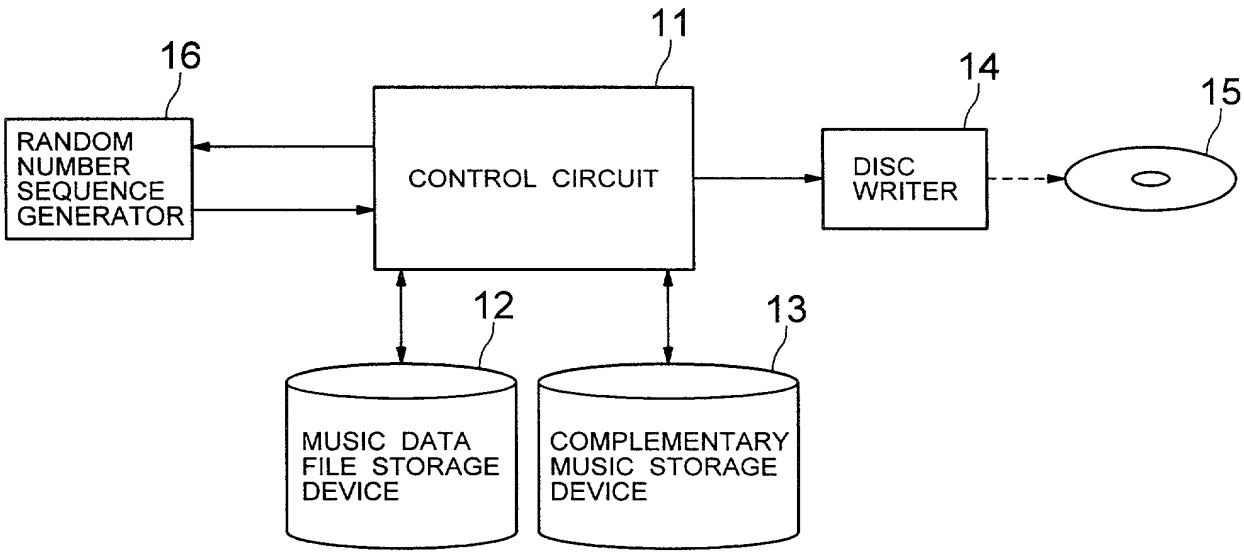


FIG. 14

RANDOM NUMBER	M	N
0	5	100
1	6	80
2	4	90
⋮	⋮	⋮
9	11	95

FIG. 15

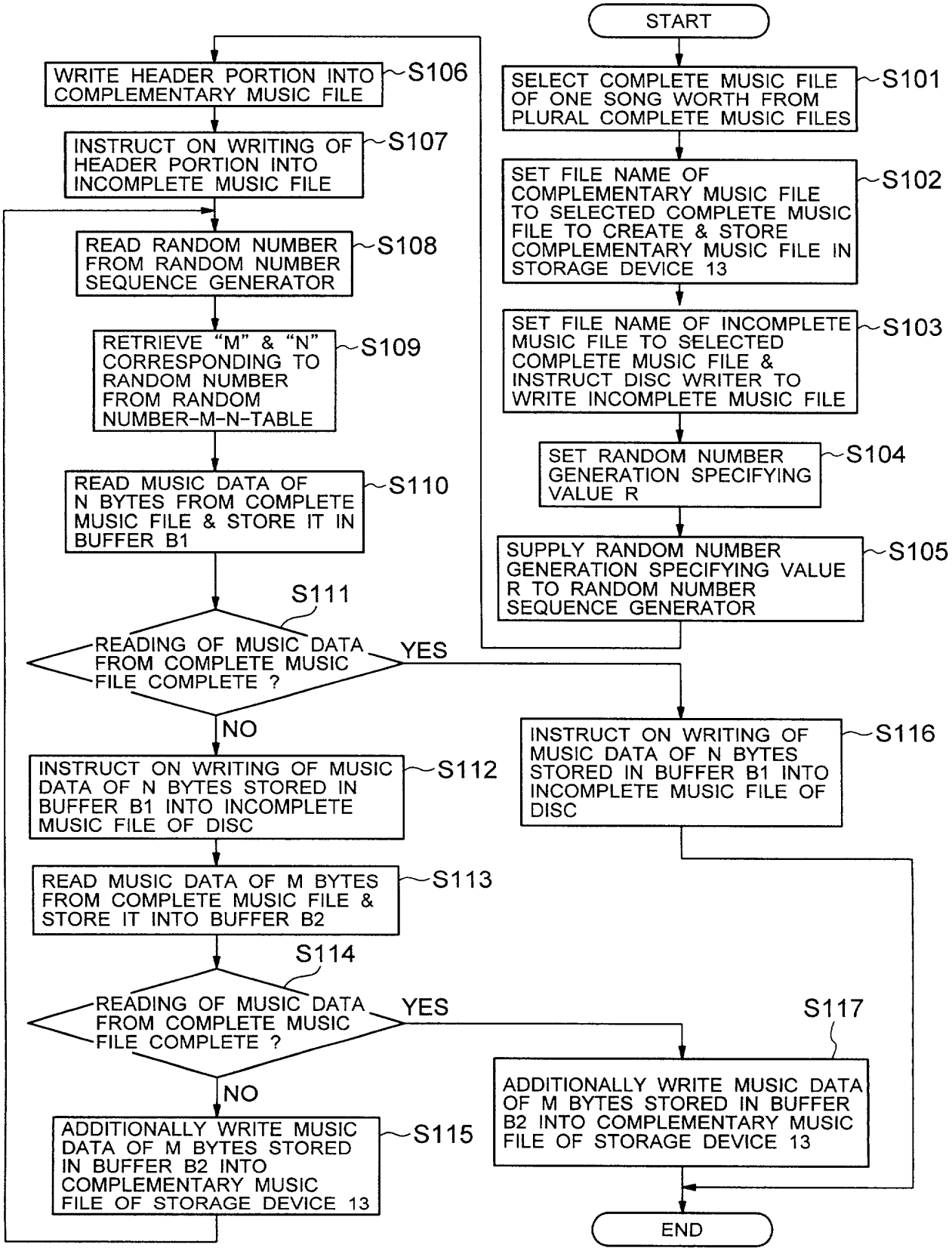

START
SELECT COMPLETE MUSIC FILE OF ONE SONG WORTH FROM PLURAL COMPLETE MUSIC FILES
S101
SET FILE NAME OF COMPLEMENTARY MUSIC FILE TO SELECTED COMPLETE MUSIC FILE TO CREATE & STORE COMPLEMENTARY MUSIC FILE IN STORAGE DEVICE 13
S102
SET FILE NAME OF INCOMPLETE MUSIC FILE TO SELECTED COMPLETE MUSIC FILE & INSTRUCT DISC WRITER TO WRITE INCOMPLETE MUSIC FILE
S103
SET RANDOM NUMBER GENERATION SPECIFYING VALUE R
S104
SUPPLY RANDOM NUMBER GENERATION SPECIFYING VALUE R TO RANDOM NUMBER SEQUENCE GENERATOR
S105
WRITE HEADER PORTION INTO COMPLEMENTARY MUSIC FILE
S106
INSTRUCT ON WRITING OF HEADER PORTION INTO INCOMPLETE MUSIC FILE
S107
READ RANDOM NUMBER FROM RANDOM NUMBER SEQUENCE GENERATOR
S108
RETRIEVE "M" & "N" CORRESPONDING TO RANDOM NUMBER FROM RANDOM NUMBER-M-N-TABLE
S109
READ MUSIC DATA OF N BYTES FROM COMPLETE MUSIC FILE & STORE IT IN BUFFER B1
S110
S111
READING OF MUSIC DATA FROM COMPLETE MUSIC FILE COMPLETE ?
YES
NO
INSTRUCT ON WRITING OF MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO INCOMPLETE MUSIC FILE OF DISC
S112
INSTRUCT ON WRITING OF MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO INCOMPLETE MUSIC FILE OF DISC
S116
READ MUSIC DATA OF M BYTES FROM COMPLETE MUSIC FILE & STORE IT INTO BUFFER B2
S113
S114
READING OF MUSIC DATA FROM COMPLETE MUSIC FILE COMPLETE ?
YES
NO
S117
ADDITIONALLY WRITE MUSIC DATA OF M BYTES STORED IN BUFFER B2 INTO COMPLEMENTARY MUSIC FILE OF STORAGE DEVICE 13
ADDITIONALLY WRITE MUSIC DATA OF M BYTES STORED IN BUFFER B2 INTO COMPLEMENTARY MUSIC FILE OF STORAGE DEVICE 13
S115
END

FIG. 16

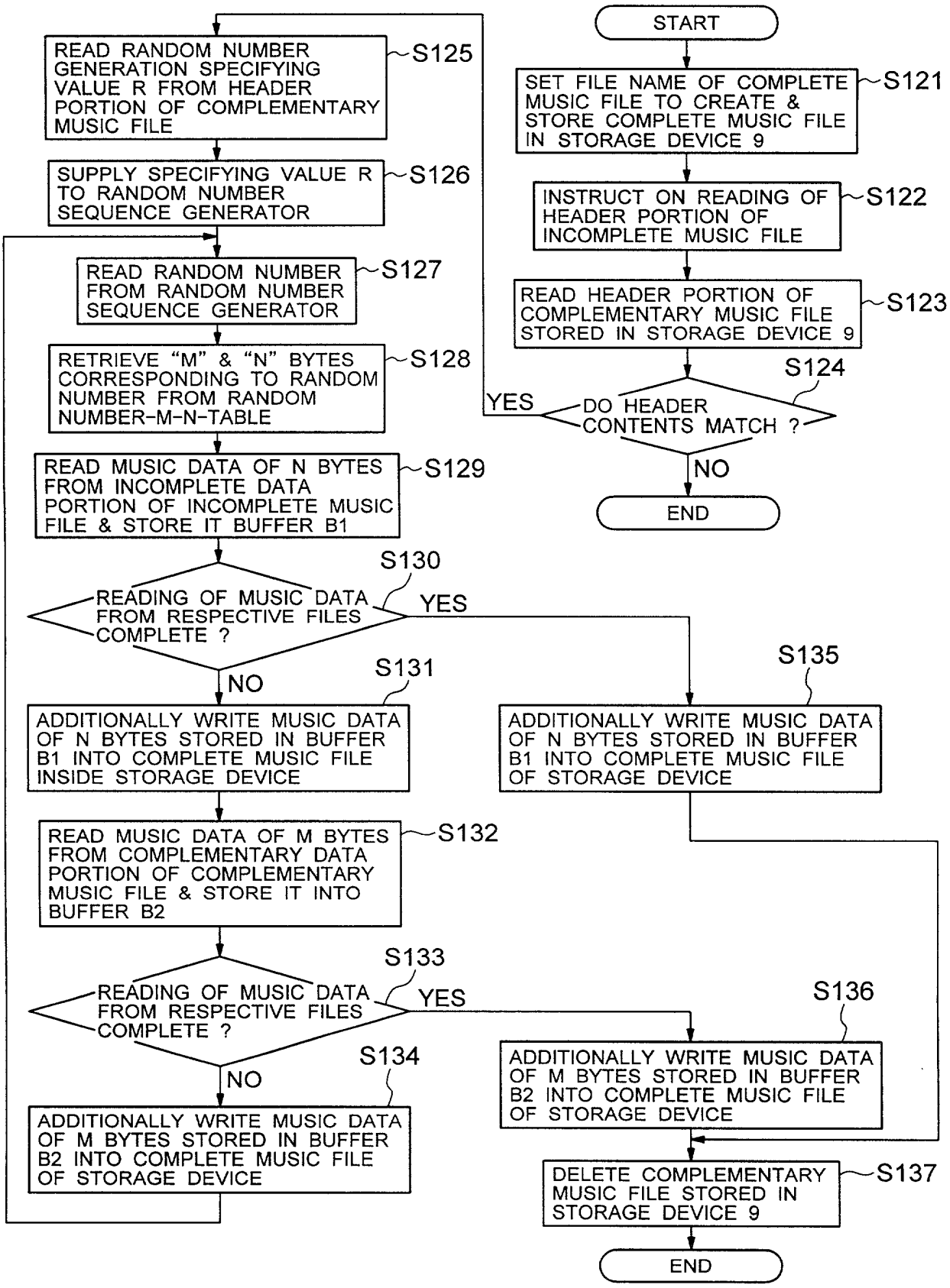

START
SET FILE NAME OF COMPLETE MUSIC FILE TO CREATE & STORE COMPLETE MUSIC FILE IN STORAGE DEVICE 9
S121
INSTRUCT ON READING OF HEADER PORTION OF INCOMPLETE MUSIC FILE
S122
READ HEADER PORTION OF COMPLEMENTARY MUSIC FILE STORED IN STORAGE DEVICE 9
S123
DO HEADER CONTENTS MATCH ?
S124
YES
NO
END
READ RANDOM NUMBER GENERATION SPECIFYING VALUE R FROM HEADER PORTION OF COMPLEMENTARY MUSIC FILE
S125
SUPPLY SPECIFYING VALUE R TO RANDOM NUMBER SEQUENCE GENERATOR
S126
READ RANDOM NUMBER FROM RANDOM NUMBER SEQUENCE GENERATOR
S127
RETRIEVE "M" & "N" BYTES CORRESPONDING TO RANDOM NUMBER FROM RANDOM NUMBER-M-N-TABLE
S128
READ MUSIC DATA OF N BYTES FROM INCOMPLETE DATA PORTION OF INCOMPLETE MUSIC FILE & STORE IT BUFFER B1
S129
READING OF MUSIC DATA FROM RESPECTIVE FILES COMPLETE ?
S130
YES
NO
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO COMPLETE MUSIC FILE INSIDE STORAGE DEVICE
S131
ADDITIONALLY WRITE MUSIC DATA OF N BYTES STORED IN BUFFER B1 INTO COMPLETE MUSIC FILE OF STORAGE DEVICE
S135
READ MUSIC DATA OF M BYTES FROM COMPLEMENTARY DATA PORTION OF COMPLEMENTARY MUSIC FILE & STORE IT INTO BUFFER B2
S132
READING OF MUSIC DATA FROM RESPECTIVE FILES COMPLETE ?
S133
YES
NO
ADDITIONALLY WRITE MUSIC DATA OF M BYTES STORED IN BUFFER B2 INTO COMPLETE MUSIC FILE OF STORAGE DEVICE
S134
ADDITIONALLY WRITE MUSIC DATA OF M BYTES STORED IN BUFFER B2 INTO COMPLETE MUSIC FILE OF STORAGE DEVICE
S136
DELETE COMPLEMENTARY MUSIC FILE STORED IN STORAGE DEVICE 9
S137
END

FIG. 17

SONG	SPECIFYING VALUE R	COMPLEMENTARY MUSIC FILE NAME
SONG NO. A1	0	Fsup1
SONG NO. A2	3	Fsup0
SONG NO. A3	2	Fsup2
⋮	⋮	⋮

FIG. 18

SONG	SPECIFYING VALUE R	COMPLEMENTARY MUSIC FILE NAME
SONG NO. A1	0	Fsup1-0
	1	Fsup1-1
	2	Fsup1-2
	⋮	⋮
	9	Fsup1-9
SONG NO. A2	0	Fsup2-0
	1	Fsup2-1
	2	Fsup2-2
	⋮	⋮
	9	Fsup2-9
SONG NO. A3	0	Fsup3-0
	1	Fsup3-1

FIG. 19

FORM OF RANDOM NUMBER	SPECIFYING VALUE R
T1	3
T2	9
T3	0
T4	5
T5	1
⋮	⋮
Ti	6

FIG. 20

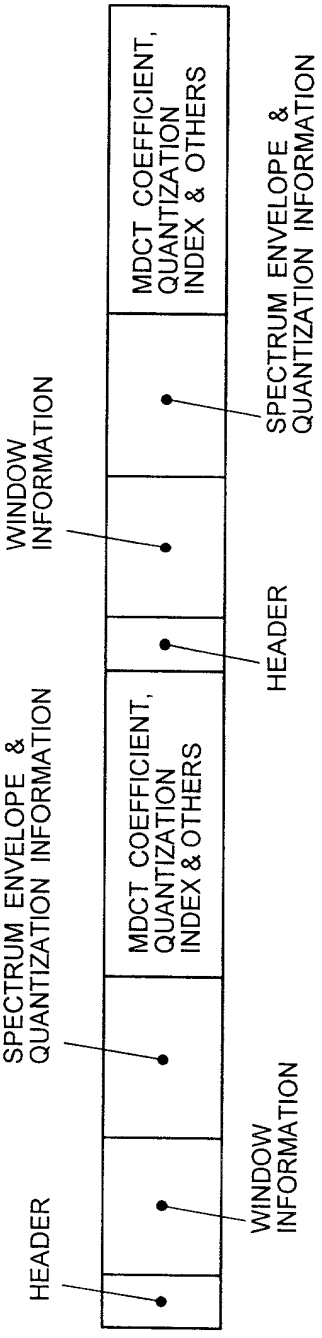

HEADER
WINDOW INFORMATION
SPECTRUM ENVELOPE & QUANTIZATION INFORMATION
MDCT COEFFICIENT, QUANTIZATION INDEX & OTHERS
HEADER
WINDOW INFORMATION
SPECTRUM ENVELOPE & QUANTIZATION INFORMATION
MDCT COEFFICIENT, QUANTIZATION INDEX & OTHERS

FIG. 21

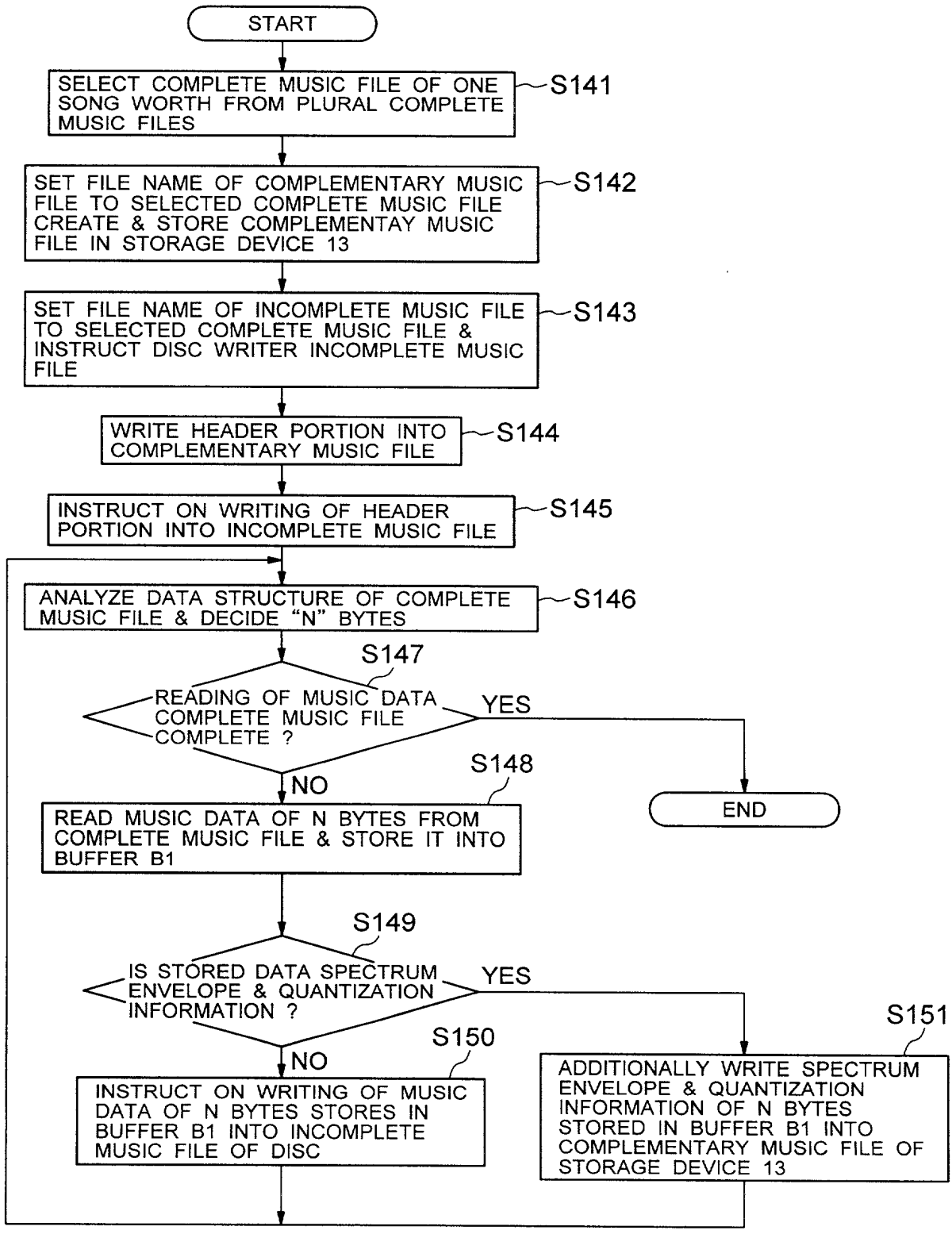

START
SELECT COMPLETE MUSIC FILE OF ONE SONG WORTH FROM PLURAL COMPLETE MUSIC FILES
S141
SET FILE NAME OF COMPLEMENTARY MUSIC FILE TO SELECTED COMPLETE MUSIC FILE CREATE & STORE COMPLEMENTAY MUSIC FILE IN STORAGE DEVICE 13
S142
SET FILE NAME OF INCOMPLETE MUSIC FILE TO SELECTED COMPLETE MUSIC FILE & INSTRUCT DISC WRITER INCOMPLETE MUSIC FILE
S143
WRITE HEADER PORTION INTO COMPLEMENTARY MUSIC FILE
S144
INSTRUCT ON WRITING OF HEADER PORTION INTO INCOMPLETE MUSIC FILE
S145
ANALYZE DATA STRUCTURE OF COMPLETE MUSIC FILE & DECIDE "N" BYTES
S146
S147
READING OF MUSIC DATA COMPLETE MUSIC FILE COMPLETE ?
YES
NO
END
S148
READ MUSIC DATA OF N BYTES FROM COMPLETE MUSIC FILE & STORE IT INTO BUFFER B1
S149
IS STORED DATA SPECTRUM ENVELOPE & QUANTIZATION INFORMATION ?
YES
NO
S150
INSTRUCT ON WRITING OF MUSIC DATA OF N BYTES STORES IN BUFFER B1 INTO INCOMPLETE MUSIC FILE OF DISC
S151
ADDITIONALLY WRITE SPECTRUM ENVELOPE & QUANTIZATION INFORMATION OF N BYTES STORED IN BUFFER B1 INTO COMPLEMENTARY MUSIC FILE OF STORAGE DEVICE 13

FIG. 22

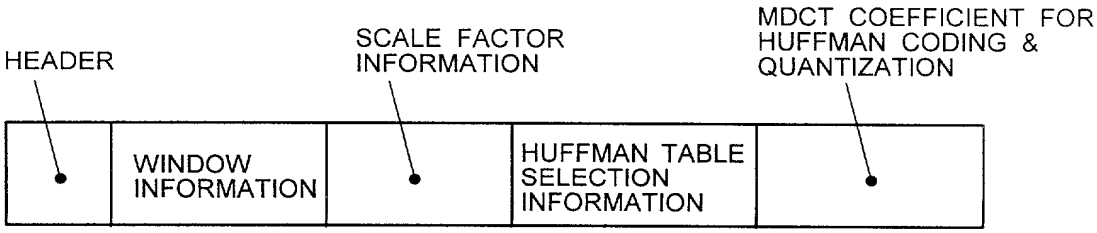

HEADER
SCALE FACTOR INFORMATION
MDCT COEFFICIENT FOR HUFFMAN CODING & QUANTIZATION
WINDOW INFORMATION
HUFFMAN TABLE SELECTION INFORMATION

FIG. 23

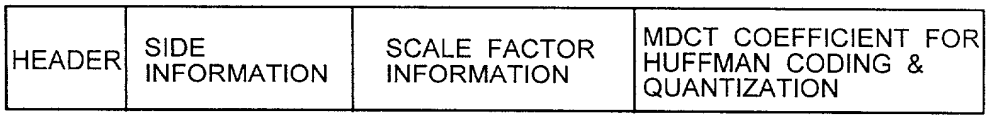

HEADER
SIDE INFORMATION
SCALE FACTOR INFORMATION
MDCT COEFFICIENT FOR HUFFMAN CODING & QUANTIZATION

FIG. 24

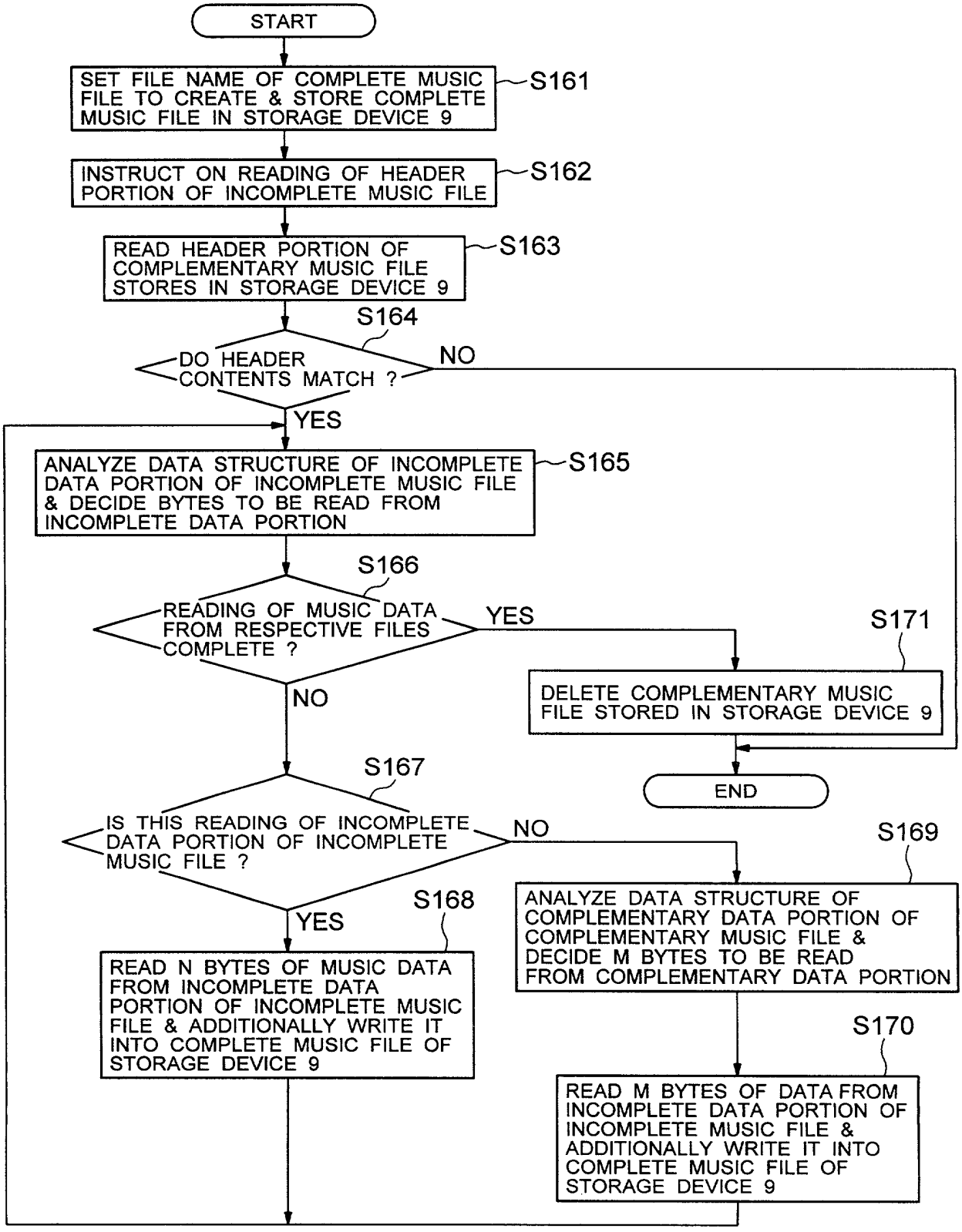

START
SET FILE NAME OF COMPLETE MUSIC FILE TO CREATE & STORE COMPLETE MUSIC FILE IN STORAGE DEVICE 9
S161
INSTRUCT ON READING OF HEADER PORTION OF INCOMPLETE MUSIC FILE
S162
READ HEADER PORTION OF COMPLEMENTARY MUSIC FILE STORES IN STORAGE DEVICE 9
S163
S164
DO HEADER CONTENTS MATCH ?
NO
YES
ANALYZE DATA STRUCTURE OF INCOMPLETE DATA PORTION OF INCOMPLETE MUSIC FILE & DECIDE BYTES TO BE READ FROM INCOMPLETE DATA PORTION
S165
S166
READING OF MUSIC DATA FROM RESPECTIVE FILES COMPLETE ?
YES
S171
DELETE COMPLEMENTARY MUSIC FILE STORED IN STORAGE DEVICE 9
NO
END
S167
IS THIS READING OF INCOMPLETE DATA PORTION OF INCOMPLETE MUSIC FILE ?
NO
S169
ANALYZE DATA STRUCTURE OF COMPLEMENTARY DATA PORTION OF COMPLEMENTARY MUSIC FILE & DECIDE M BYTES TO BE READ FROM COMPLEMENTARY DATA PORTION
S168
YES
READ N BYTES OF MUSIC DATA FROM INCOMPLETE DATA PORTION OF INCOMPLETE MUSIC FILE & ADDITIONALLY WRITE IT INTO COMPLETE MUSIC FILE OF STORAGE DEVICE 9
S170
READ M BYTES OF DATA FROM INCOMPLETE DATA PORTION OF INCOMPLETE MUSIC FILE & ADDITIONALLY WRITE IT INTO COMPLETE MUSIC FILE OF STORAGE DEVICE 9

FIG. 25

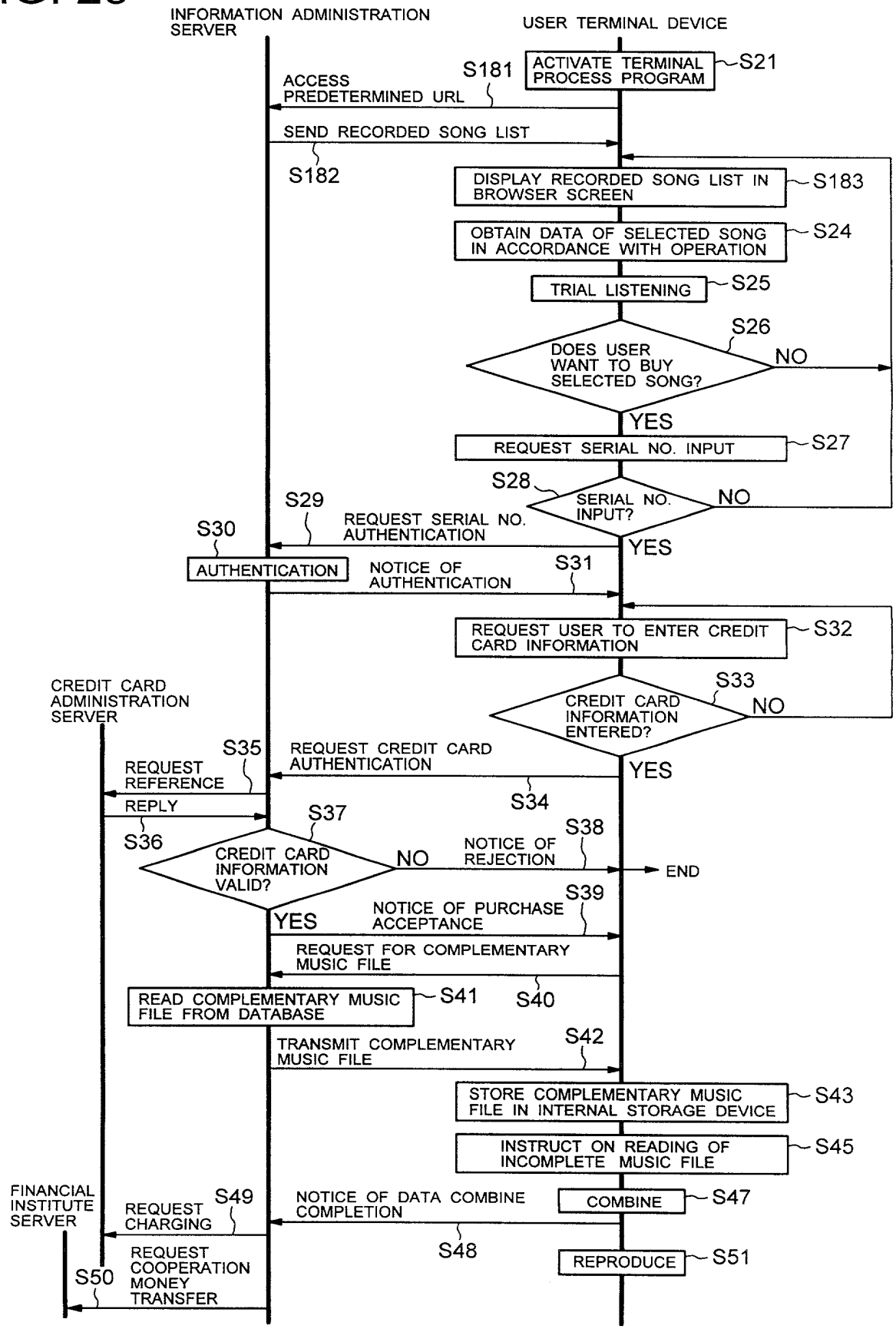

INFORMATION ADMINISTRATION SERVER
USER TERMINAL DEVICE
ACTIVATE TERMINAL PROCESS PROGRAM
S21
S181
ACCESS PREDETERMINED URL
SEND RECORDED SONG LIST
S182
DISPLAY RECORDED SONG LIST IN BROWSER SCREEN
S183
OBTAIN DATA OF SELECTED SONG IN ACCORDANCE WITH OPERATION
S24
TRIAL LISTENING
S25
S26
DOES USER WANT TO BUY SELECTED SONG?
NO
YES
REQUEST SERIAL NO. INPUT
S27
S28
SERIAL NO. INPUT?
NO
YES
S29
REQUEST SERIAL NO. AUTHENTICATION
S30
AUTHENTICATION
NOTICE OF AUTHENTICATION
S31
REQUEST USER TO ENTER CREDIT CARD INFORMATION
S32
CREDIT CARD ADMINISTRATION SERVER
S33
CREDIT CARD INFORMATION ENTERED?
NO
YES
S35
REQUEST REFERENCE
REQUEST CREDIT CARD AUTHENTICATION
S34
REPLY
S36
S37
CREDIT CARD INFORMATION VALID?
NO
NOTICE OF REJECTION
S38
END
YES
NOTICE OF PURCHASE ACCEPTANCE
S39
REQUEST FOR COMPLEMENTARY MUSIC FILE
S40
READ COMPLEMENTARY MUSIC FILE FROM DATABASE
S41
TRANSMIT COMPLEMENTARY MUSIC FILE
S42
STORE COMPLEMENTARY MUSIC FILE IN INTERNAL STORAGE DEVICE
S43
INSTRUCT ON READING OF INCOMPLETE MUSIC FILE
S45
FINANCIAL INSTITUTE SERVER
S49
REQUEST CHARGING
NOTICE OF DATA COMBINE COMPLETION
COMBINE
S47
S48
REQUEST COOPERATION MONEY TRANSFER
S50
REPRODUCE
S51

FIG. 26

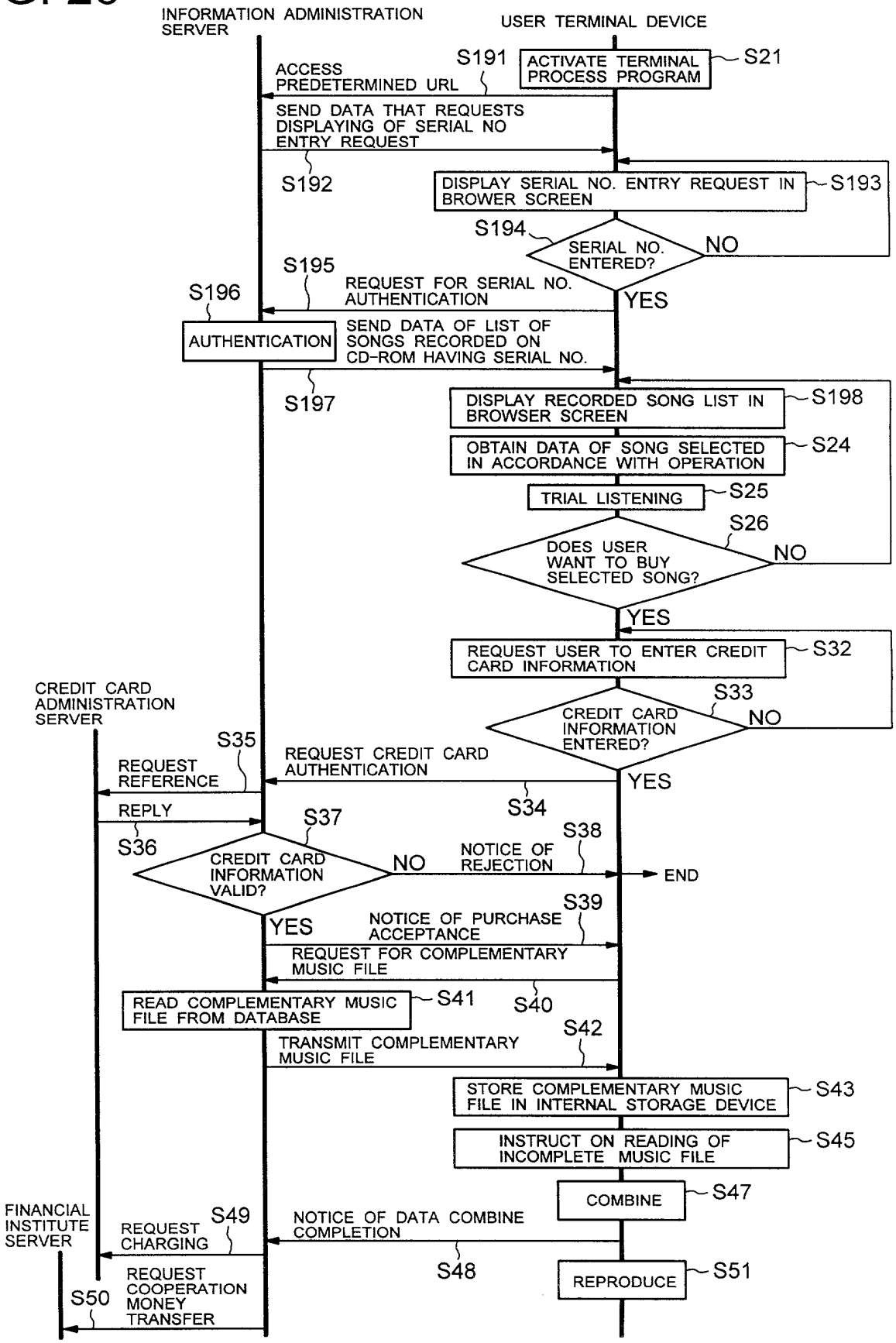

INFORMATION ADMINISTRATION SERVER
USER TERMINAL DEVICE
S191
ACTIVATE TERMINAL PROCESS PROGRAM
S21
ACCESS PREDETERMINED URL
SEND DATA THAT REQUESTS DISPLAYING OF SERIAL NO ENTRY REQUEST
S192
DISPLAY SERIAL NO. ENTRY REQUEST IN BROWER SCREEN
S193
S194
SERIAL NO. ENTERED?
NO
YES
S195
REQUEST FOR SERIAL NO. AUTHENTICATION
S196
AUTHENTICATION
SEND DATA OF LIST OF SONGS RECORDED ON CD-ROM HAVING SERIAL NO.
S197
DISPLAY RECORDED SONG LIST IN BROWSER SCREEN
S198
OBTAIN DATA OF SONG SELECTED IN ACCORDANCE WITH OPERATION
S24
TRIAL LISTENING
S25
S26
DOES USER WANT TO BUY SELECTED SONG?
NO
YES
REQUEST USER TO ENTER CREDIT CARD INFORMATION
S32
S33
CREDIT CARD INFORMATION ENTERED?
NO
YES
CREDIT CARD ADMINISTRATION SERVER
S35
REQUEST REFERENCE
REQUEST CREDIT CARD AUTHENTICATION
S34
REPLY
S36
S37
CREDIT CARD INFORMATION VALID?
NO
S38
NOTICE OF REJECTION
END
YES
S39
NOTICE OF PURCHASE ACCEPTANCE
REQUEST FOR COMPLEMENTARY MUSIC FILE
S40
READ COMPLEMENTARY MUSIC FILE FROM DATABASE
S41
S42
TRANSMIT COMPLEMENTARY MUSIC FILE
STORE COMPLEMENTARY MUSIC FILE IN INTERNAL STORAGE DEVICE
S43
INSTRUCT ON READING OF INCOMPLETE MUSIC FILE
S45
COMBINE
S47
FINANCIAL INSTITUTE SERVER
S49
REQUEST CHARGING
NOTICE OF DATA COMBINE COMPLETION
S48
REQUEST COOPERATION MONEY TRANSFER
S50
REPRODUCE
S51

FIG. 27

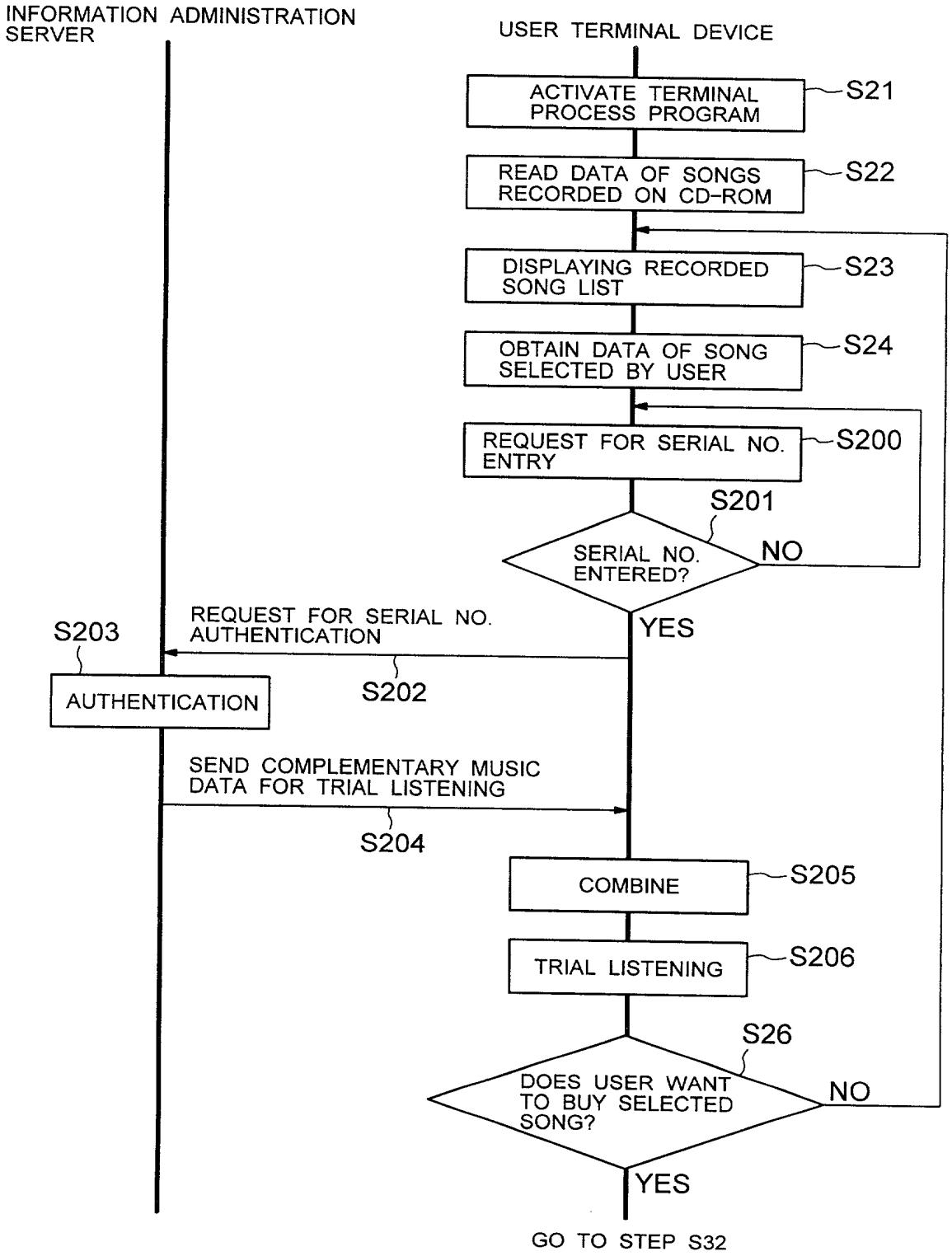

INFORMATION ADMINISTRATION SERVER
USER TERMINAL DEVICE
ACTIVATE TERMINAL PROCESS PROGRAM
S21
READ DATA OF SONGS RECORDED ON CD-ROM
S22
DISPLAYING RECORDED SONG LIST
S23
OBTAIN DATA OF SONG SELECTED BY USER
S24
REQUEST FOR SERIAL NO. ENTRY
S200
S201
SERIAL NO. ENTERED?
NO
YES
REQUEST FOR SERIAL NO. AUTHENTICATION
S202
S203
AUTHENTICATION
SEND COMPLEMENTARY MUSIC DATA FOR TRIAL LISTENING
S204
COMBINE
S205
TRIAL LISTENING
S206
S26
DOES USER WANT TO BUY SELECTED SONG?
NO
YES
GO TO STEP S32

FIG. 28

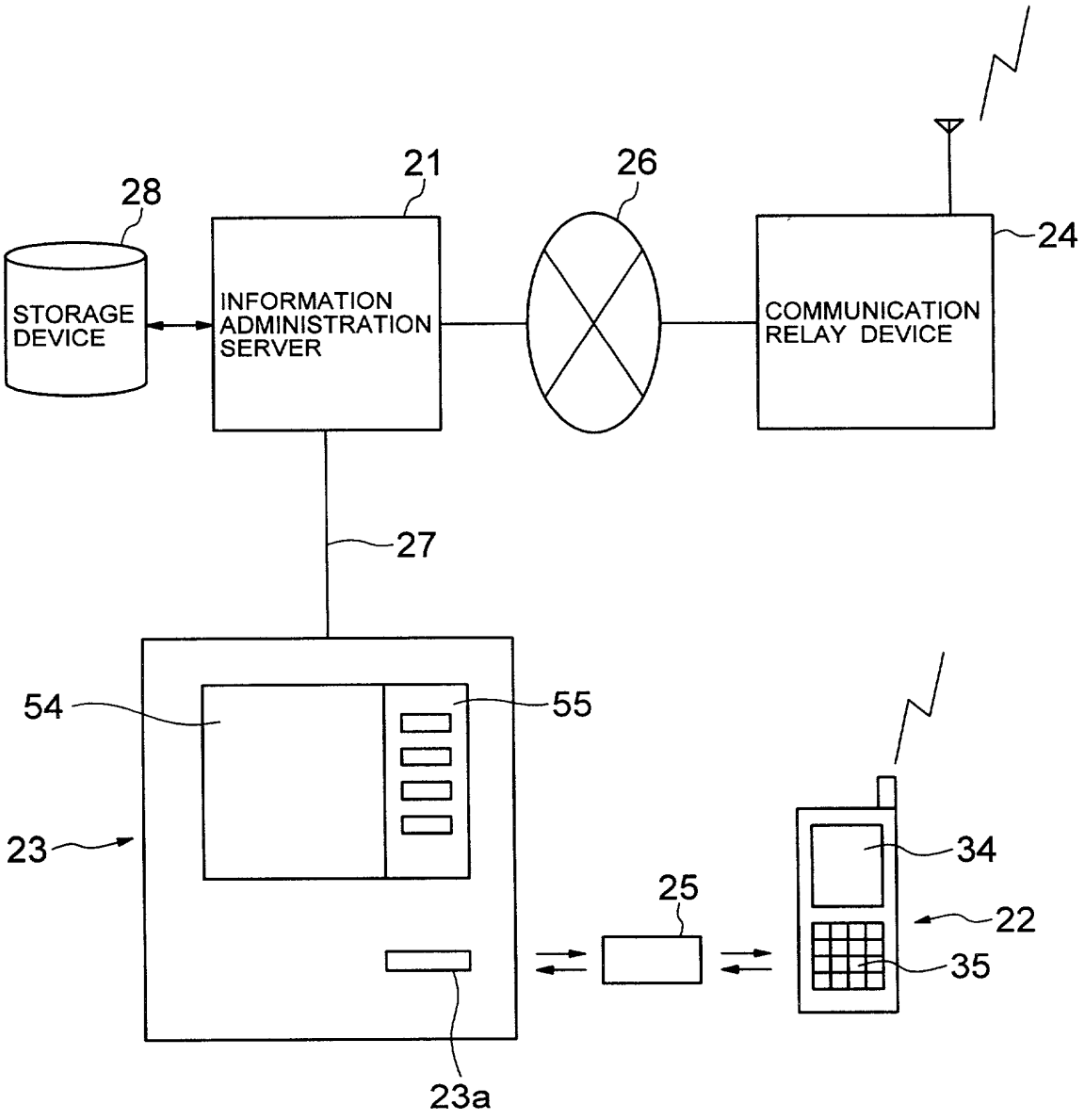

28
21
26
24
STORAGE DEVICE
INFORMATION ADMINISTRATION SERVER
COMMUNICATION RELAY DEVICE
27
54
55
23
34
25
22
35
23a

FIG. 29

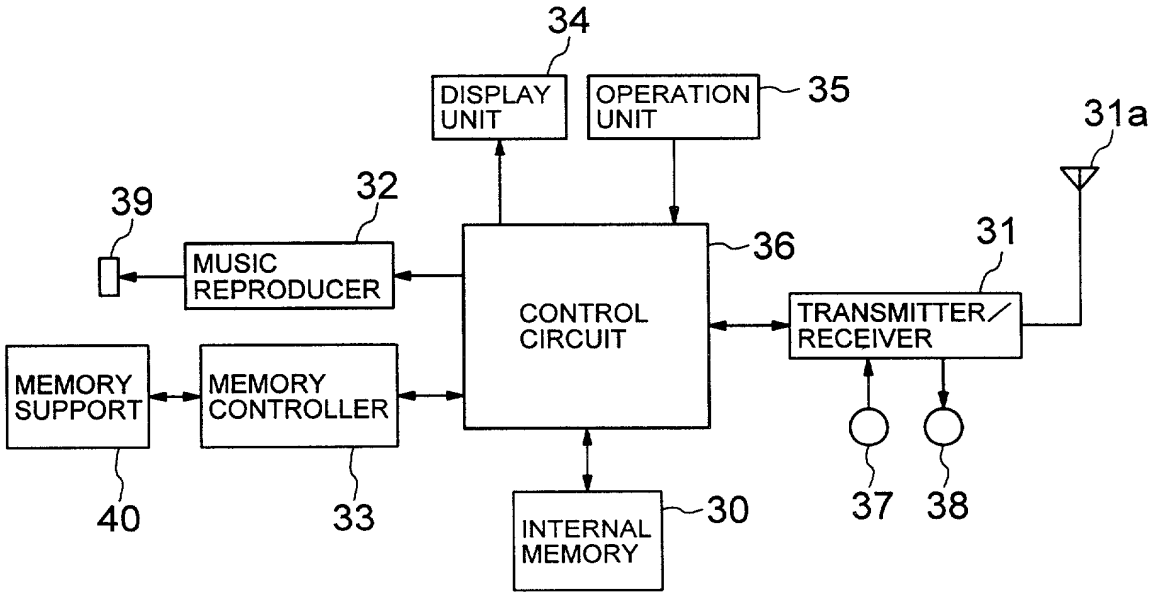

34
DISPLAY UNIT
OPERATION UNIT
35
31a
39
32
MUSIC REPRODUCER
36
31
CONTROL CIRCUIT
TRANSMITTER/ RECEIVER
MEMORY SUPPORT
MEMORY CONTROLLER
40
33
INTERNAL MEMORY
30
37
38

FIG. 30

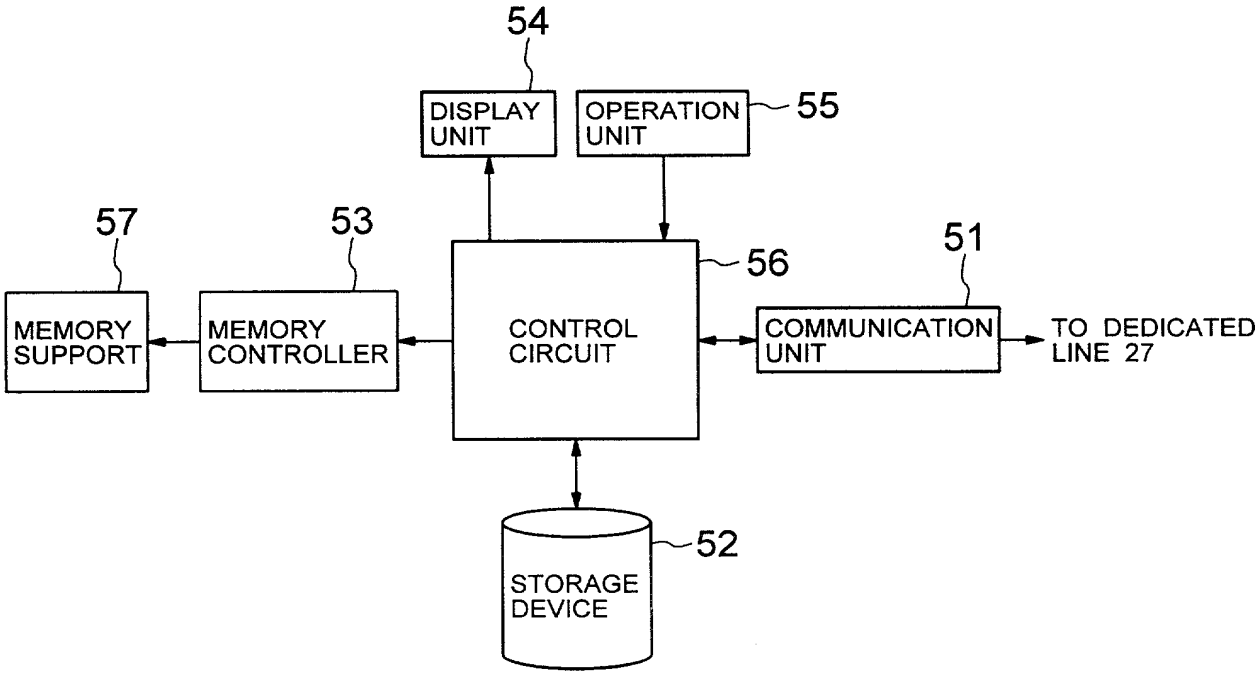

54
DISPLAY UNIT
OPERATION UNIT
55
57
53
56
51
MEMORY SUPPORT
MEMORY CONTROLLER
CONTROL CIRCUIT
COMMUNICATION UNIT
TO DEDICATED LINE 27
52
STORAGE DEVICE

FIG. 31

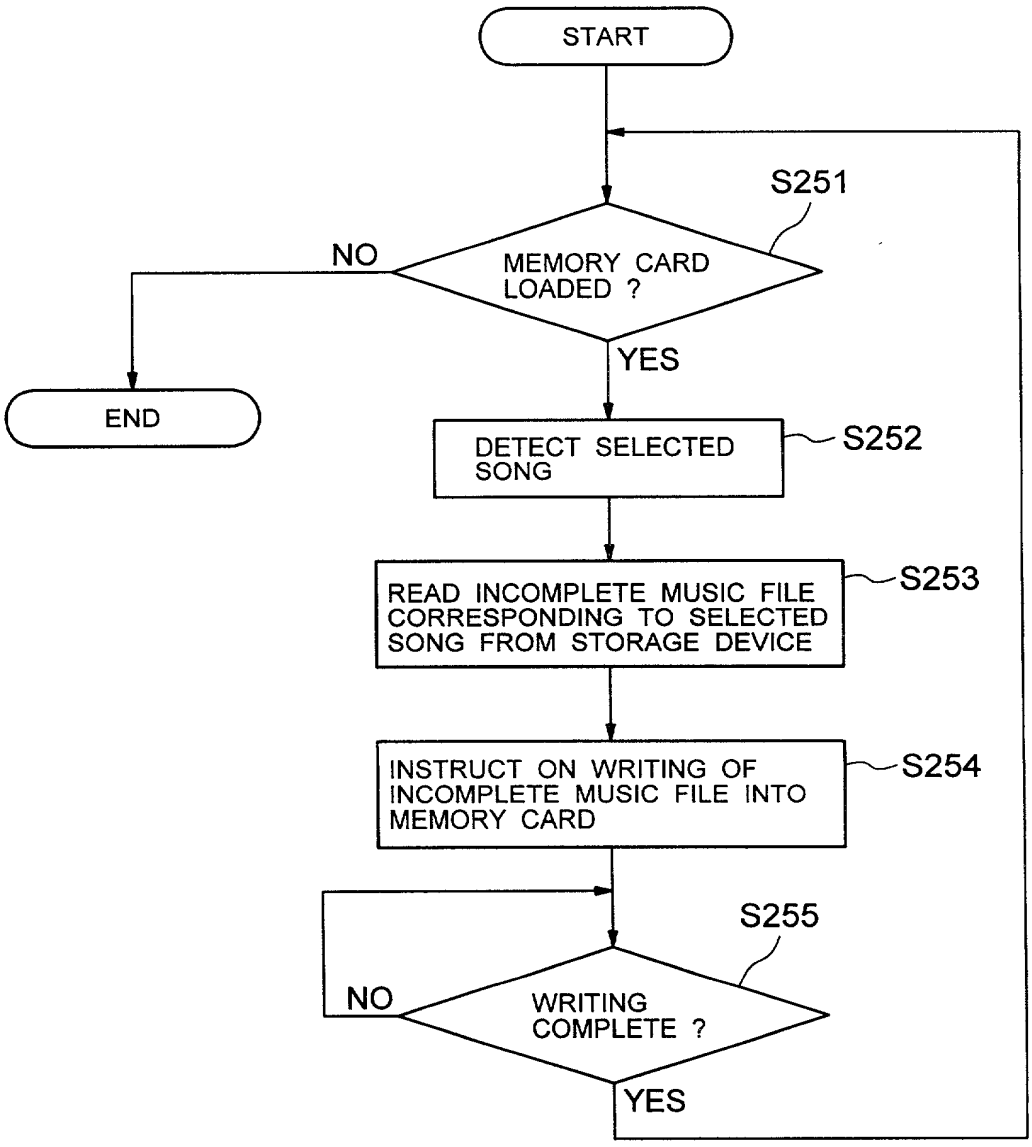

START
S251
MEMORY CARD LOADED ?
NO
YES
END
DETECT SELECTED SONG
S252
READ INCOMPLETE MUSIC FILE CORRESPONDING TO SELECTED SONG FROM STORAGE DEVICE
S253
INSTRUCT ON WRITING OF INCOMPLETE MUSIC FILE INTO MEMORY CARD
S254
S255
WRITING COMPLETE ?
NO
YES

FIG. 32

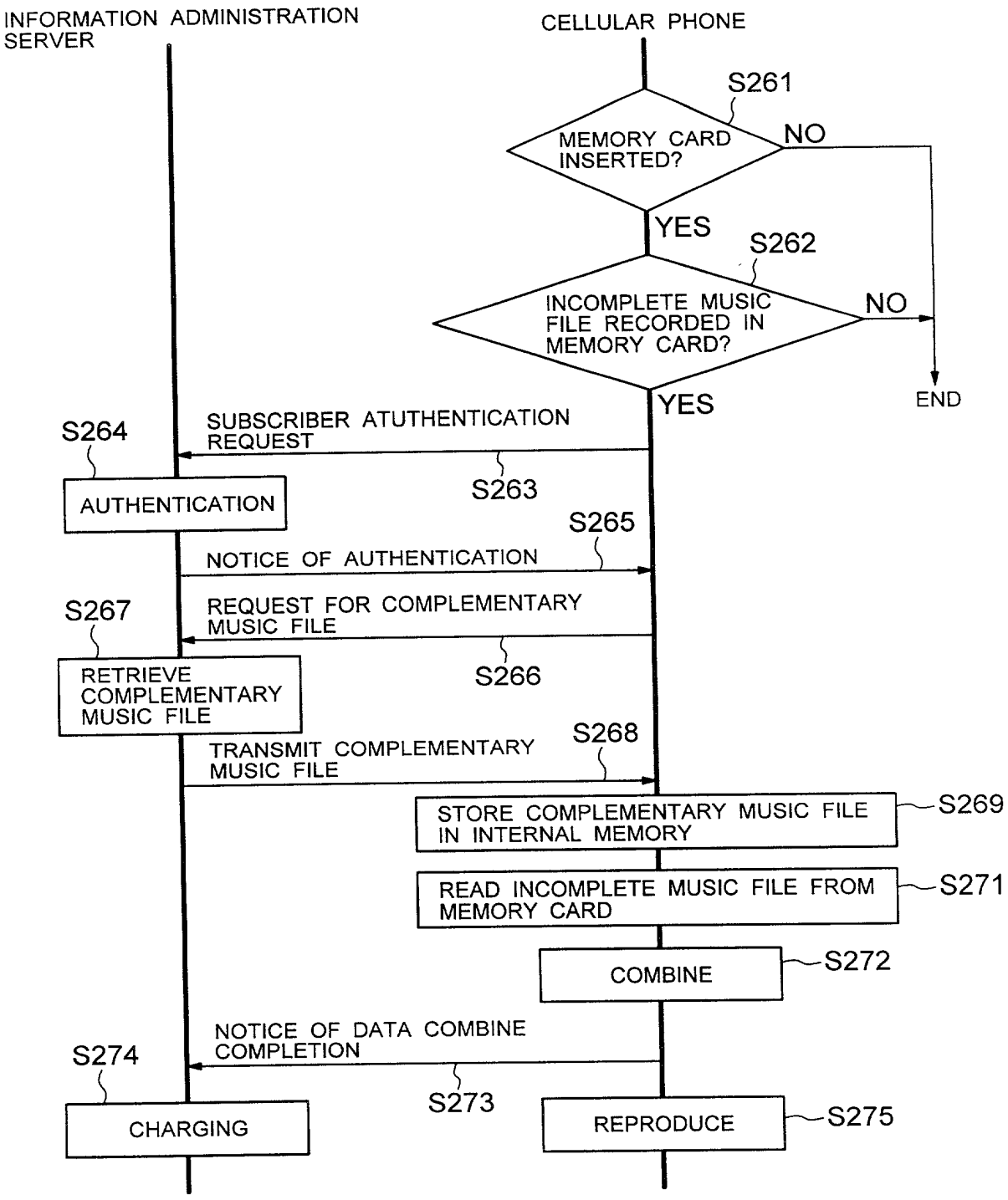

INFORMATION ADMINISTRATION SERVER
CELLULAR PHONE
S261
MEMORY CARD INSERTED?
NO
YES
S262
INCOMPLETE MUSIC FILE RECORDED IN MEMORY CARD?
NO
END
YES
S264
SUBSCRIBER ATUTHENTICATION REQUEST
S263
AUTHENTICATION
S265
NOTICE OF AUTHENTICATION
S267
REQUEST FOR COMPLEMENTARY MUSIC FILE
S266
RETRIEVE COMPLEMENTARY MUSIC FILE
S268
TRANSMIT COMPLEMENTARY MUSIC FILE
STORE COMPLEMENTARY MUSIC FILE IN INTERNAL MEMORY
S269
READ INCOMPLETE MUSIC FILE FROM MEMORY CARD
S271
COMBINE
S272
NOTICE OF DATA COMBINE COMPLETION
S274
S273
CHARGING
REPRODUCE
S275

FIG. 33

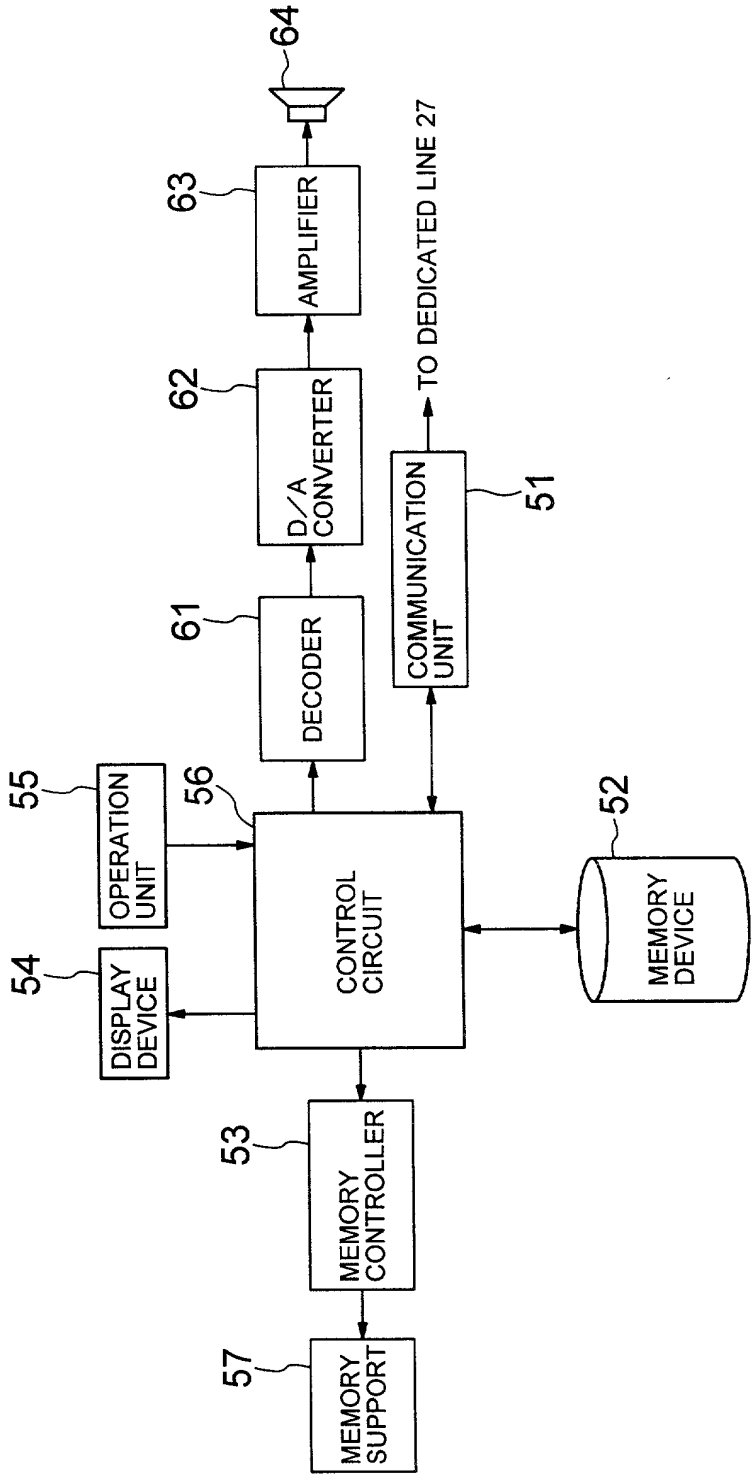

64
63
AMPLIFIER
62
D/A CONVERTER
TO DEDICATED LINE 27
61
DECODER
COMMUNICATION UNIT
51
55
OPERATION UNIT
56
52
54
DISPLAY DEVICE
CONTROL CIRCUIT
MEMORY DEVICE
53
MEMORY CONTROLLER
57
MEMORY SUPPORT

FIG. 34

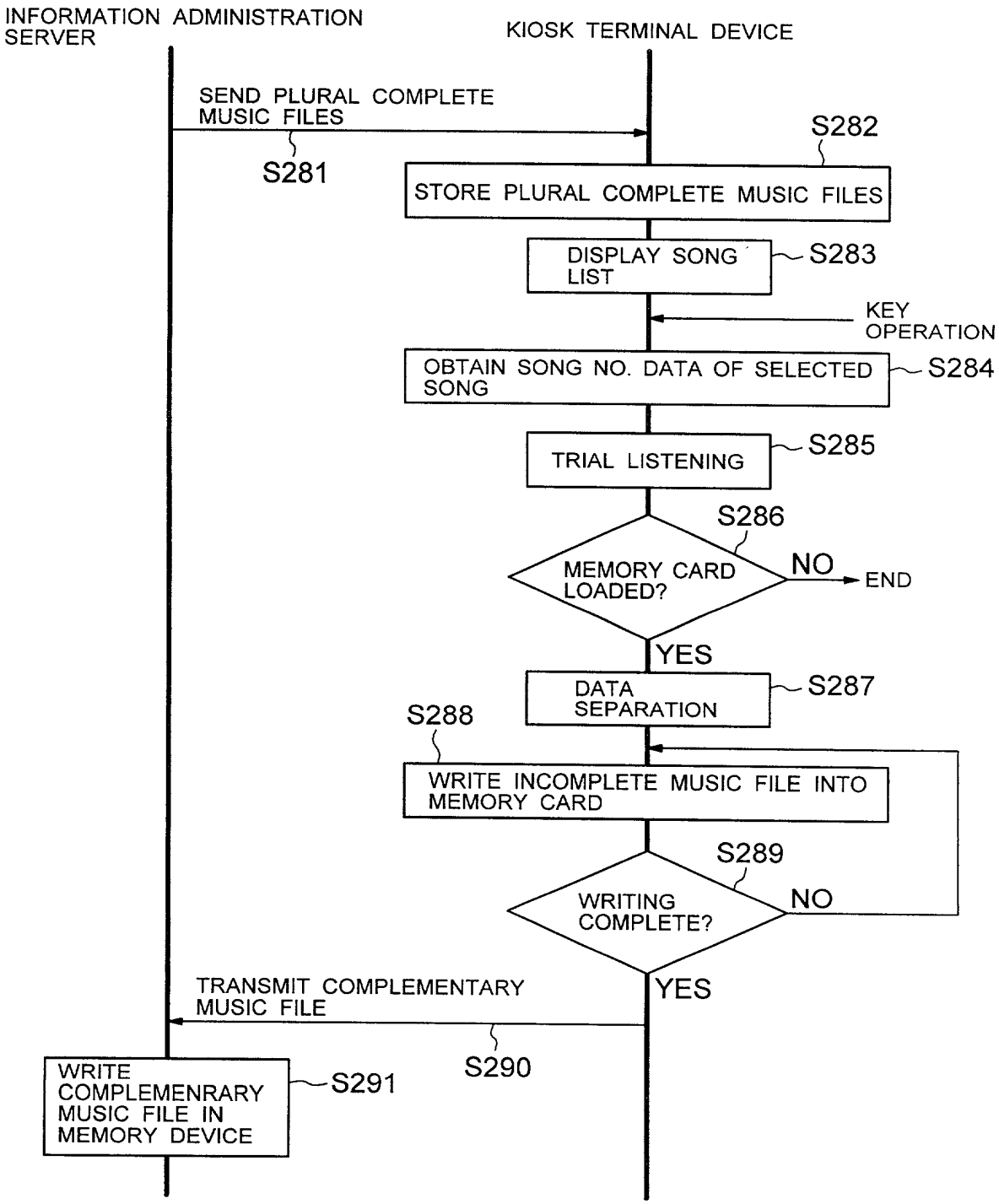

INFORMATION ADMINISTRATION SERVER
KIOSK TERMINAL DEVICE
SEND PLURAL COMPLETE MUSIC FILES
S281
S282
STORE PLURAL COMPLETE MUSIC FILES
DISPLAY SONG LIST
S283
KEY OPERATION
OBTAIN SONG NO. DATA OF SELECTED SONG
S284
TRIAL LISTENING
S285
S286
MEMORY CARD LOADED?
NO
END
YES
DATA SEPARATION
S287
S288
WRITE INCOMPLETE MUSIC FILE INTO MEMORY CARD
S289
WRITING COMPLETE?
NO
YES
TRANSMIT COMPLEMENTARY MUSIC FILE
S290
WRITE COMPLEMENRARY MUSIC FILE IN MEMORY DEVICE
S291

FIG. 35

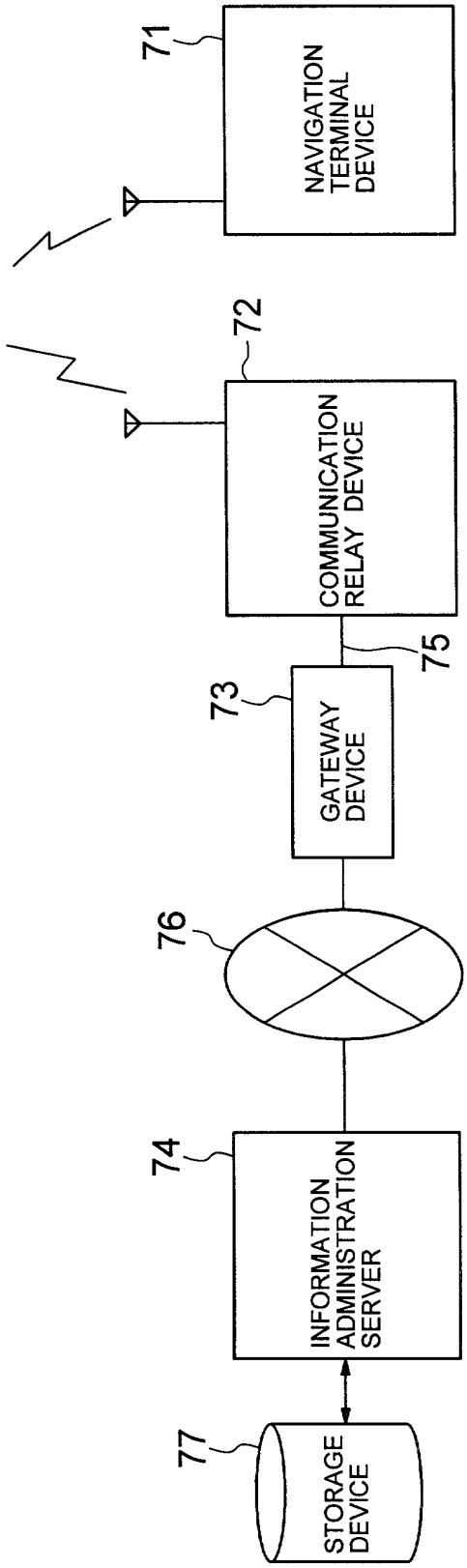

71
NAVIGATION TERMINAL DEVICE
72
COMMUNICATION RELAY DEVICE
75
73
GATEWAY DEVICE
76
74
INFORMATION ADMINISTRATION SERVER
77
STORAGE DEVICE

FIG. 36

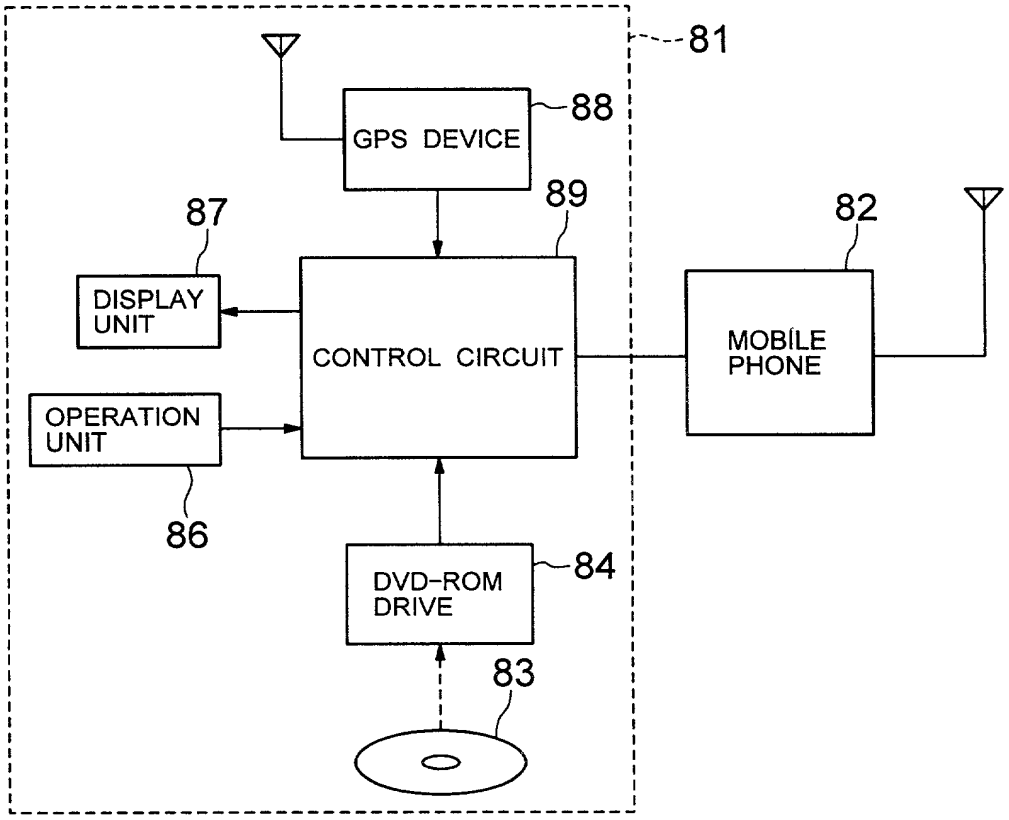


FIG. 37

ADMINISTRATION PORTION	MAP DATA PORTION

FIG. 38

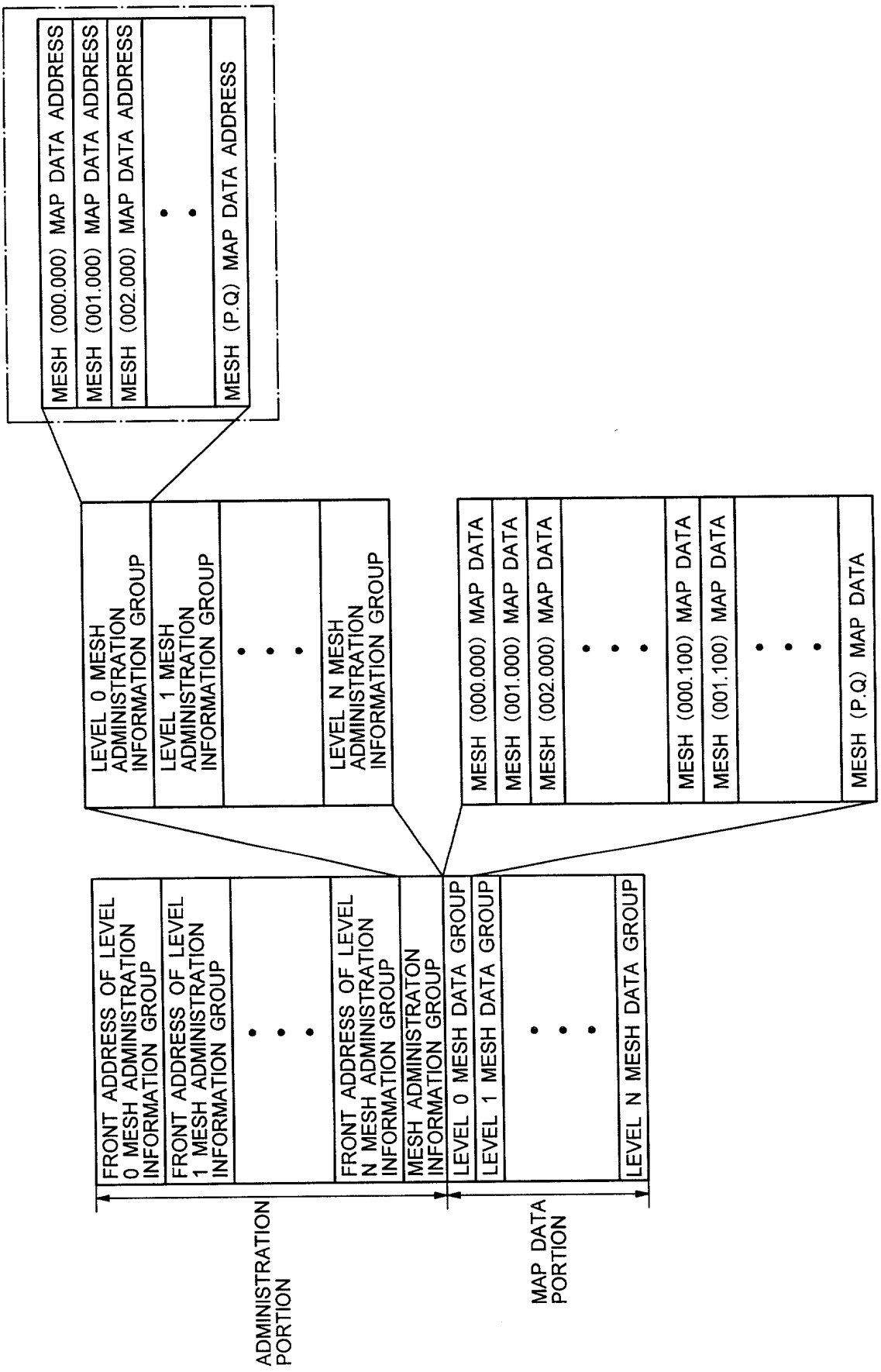

ADMINISTRATION PORTION
MAP DATA PORTION
FRONT ADDRESS OF LEVEL 0 MESH ADMINISTRATION INFORMATION GROUP
FRONT ADDRESS OF LEVEL 1 MESH ADMINISTRATION INFORMATION GROUP
FRONT ADDRESS OF LEVEL N MESH ADMINISTRATION INFORMATION GROUP
MESH ADMINISTRATON INFORMATION GROUP
LEVEL 0 MESH DATA GROUP
LEVEL 1 MESH DATA GROUP
LEVEL N MESH DATA GROUP
LEVEL 0 MESH ADMINISTRATION INFORMATION GROUP
LEVEL 1 MESH ADMINISTRATION INFORMATION GROUP
LEVEL N MESH ADMINISTRATION INFORMATION GROUP
MESH (000.000) MAP DATA ADDRESS
MESH (001.000) MAP DATA ADDRESS
MESH (002.000) MAP DATA ADDRESS
MESH (P.Q) MAP DATA ADDRESS
MESH (000.000) MAP DATA
MESH (001.000) MAP DATA
MESH (002.000) MAP DATA
MESH (000.100) MAP DATA
MESH (001.100) MAP DATA
MESH (P.Q) MAP DATA

FIG. 39

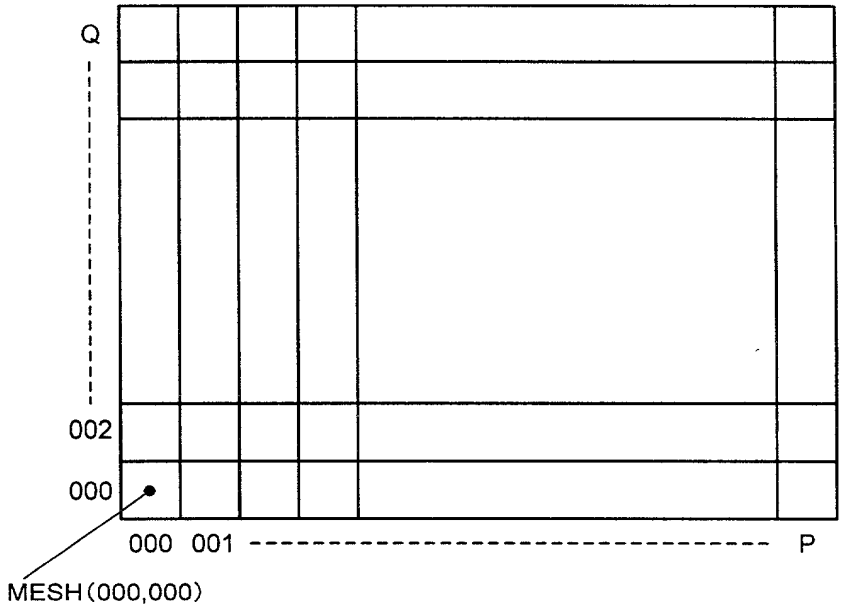


FIG. 40

MESH(000,000)	MAP DATA ADDRESS 1
MESH(001,000)	MAP DATA ADDRESS 2
⋮	⋮
MESH(100,000)	MAP DATA ADDRESS 100
MESH(101,000)	MAP DATA ADDRESS 101
MESH(102,000)	MAP DATA ADDRESS 102
⋮	⋮
MESH(200,000)	MAP DATA ADDRESS 200
MESH(201,000)	MAP DATA ADDRESS 201
⋮	⋮
MESH(P , Q)	MAP DATA ADDRESS n

FIG. 41

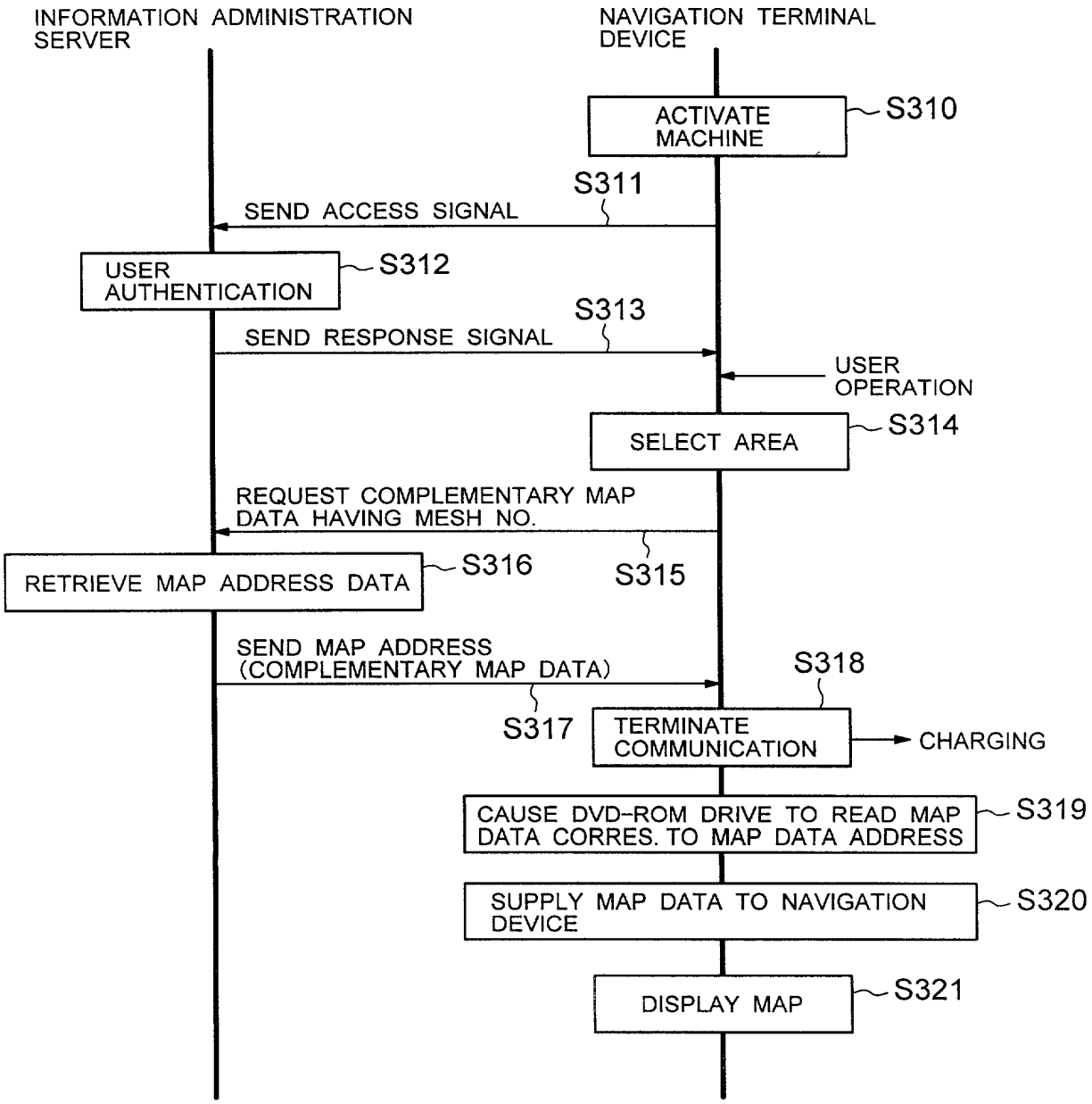

INFORMATION ADMINISTRATION SERVER
NAVIGATION TERMINAL DEVICE
ACTIVATE MACHINE
S310
S311
SEND ACCESS SIGNAL
USER AUTHENTICATION
S312
S313
SEND RESPONSE SIGNAL
USER OPERATION
SELECT AREA
S314
REQUEST COMPLEMENTARY MAP DATA HAVING MESH NO.
S315
RETRIEVE MAP ADDRESS DATA
S316
SEND MAP ADDRESS (COMPLEMENTARY MAP DATA)
S317
S318
TERMINATE COMMUNICATION
CHARGING
CAUSE DVD-ROM DRIVE TO READ MAP DATA CORRES. TO MAP DATA ADDRESS
S319
SUPPLY MAP DATA TO NAVIGATION DEVICE
S320
DISPLAY MAP
S321

FIG. 42

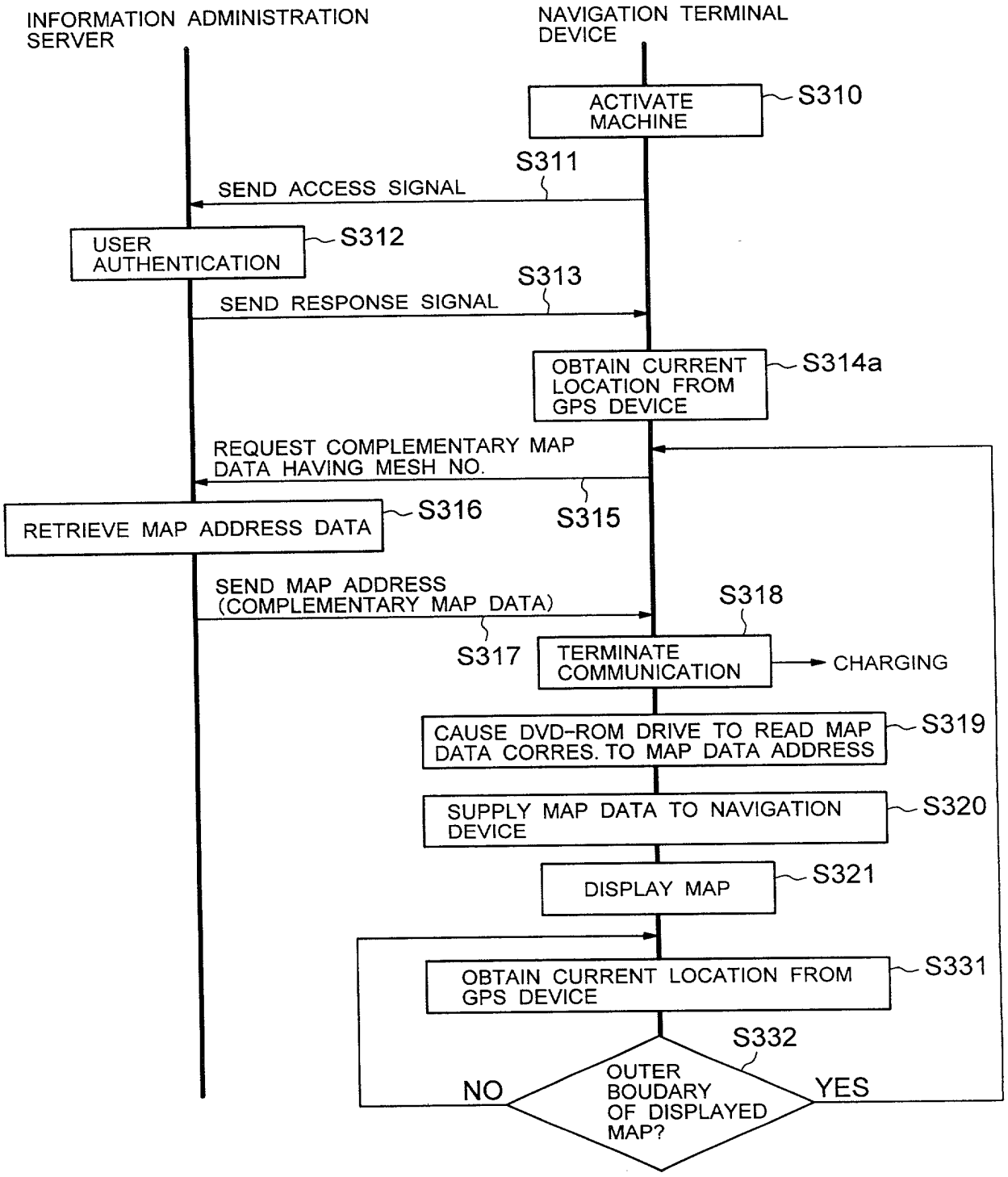

INFORMATION ADMINISTRATION SERVER
NAVIGATION TERMINAL DEVICE
ACTIVATE MACHINE
S310
S311
SEND ACCESS SIGNAL
USER AUTHENTICATION
S312
S313
SEND RESPONSE SIGNAL
OBTAIN CURRENT LOCATION FROM GPS DEVICE
S314a
REQUEST COMPLEMENTARY MAP DATA HAVING MESH NO.
S315
RETRIEVE MAP ADDRESS DATA
S316
SEND MAP ADDRESS (COMPLEMENTARY MAP DATA)
S317
S318
TERMINATE COMMUNICATION
CHARGING
CAUSE DVD-ROM DRIVE TO READ MAP DATA CORRES. TO MAP DATA ADDRESS
S319
SUPPLY MAP DATA TO NAVIGATION DEVICE
S320
DISPLAY MAP
S321
OBTAIN CURRENT LOCATION FROM GPS DEVICE
S331
S332
OUTER BOUDARY OF DISPLAYED MAP?
NO
YES

FIG. 43

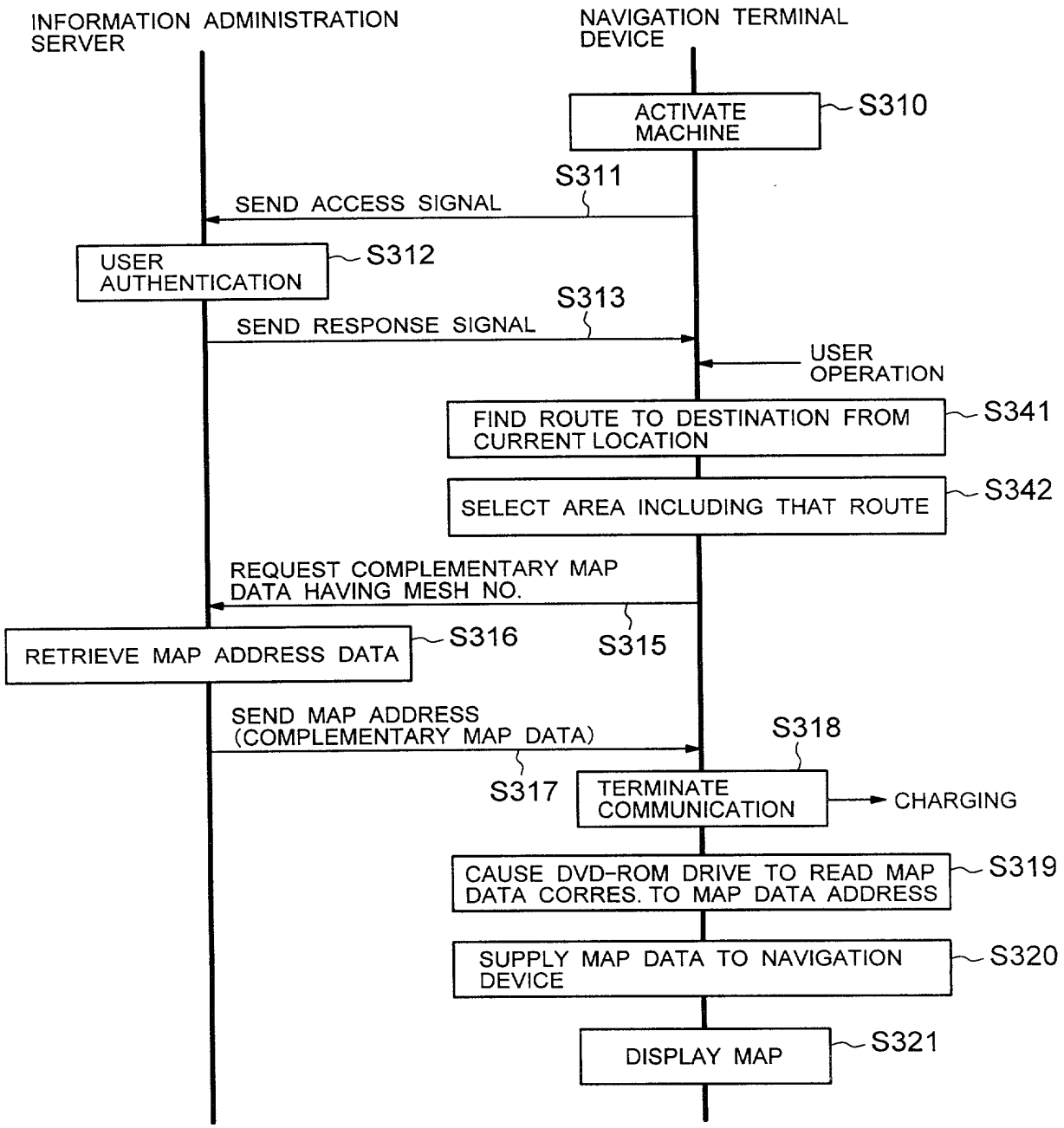
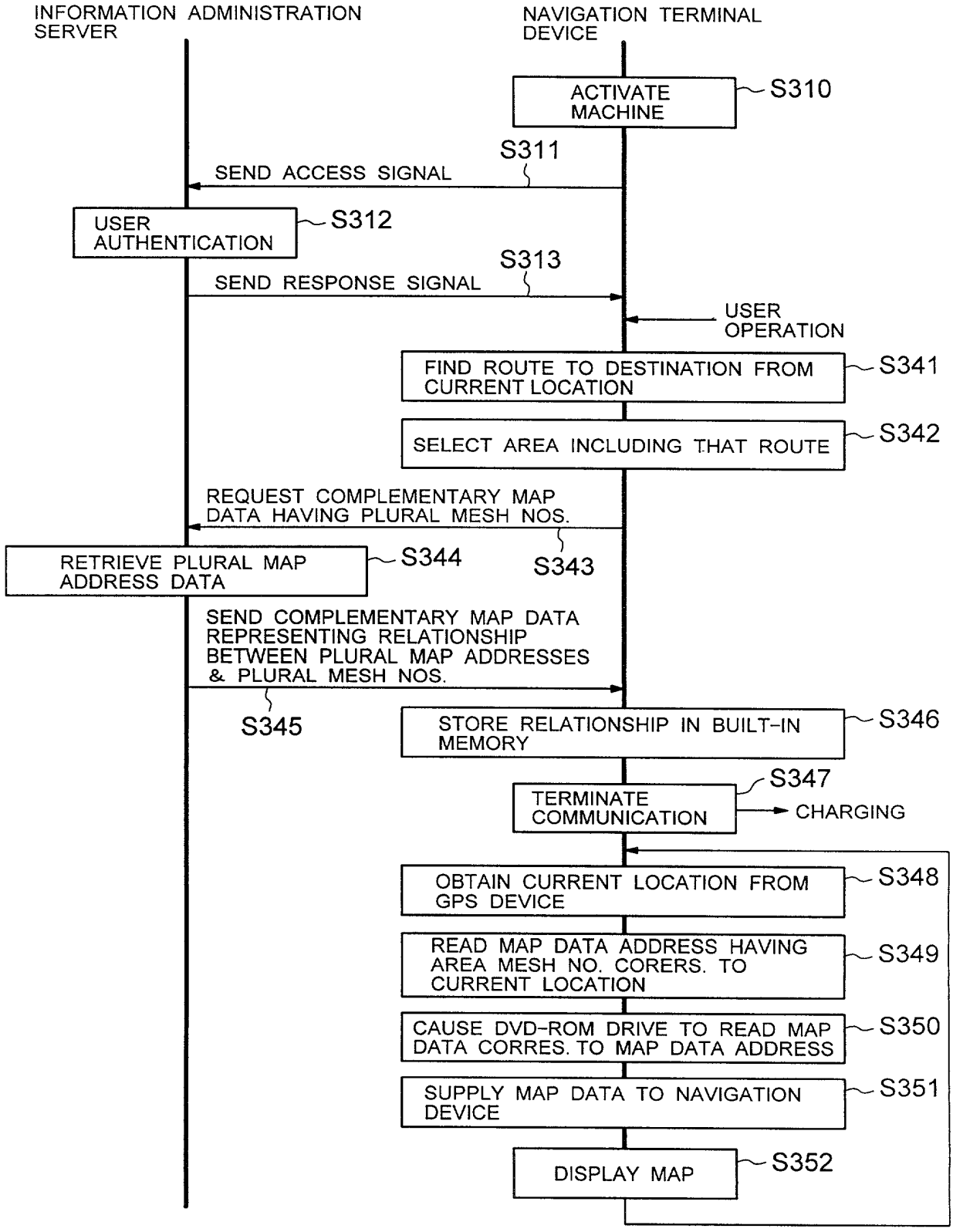

INFORMATION ADMINISTRATION SERVER
NAVIGATION TERMINAL DEVICE
ACTIVATE MACHINE
S310
S311
SEND ACCESS SIGNAL
USER AUTHENTICATION
S312
S313
SEND RESPONSE SIGNAL
USER OPERATION
FIND ROUTE TO DESTINATION FROM CURRENT LOCATION
S341
SELECT AREA INCLUDING THAT ROUTE
S342
REQUEST COMPLEMENTARY MAP DATA HAVING MESH NO.
S315
RETRIEVE MAP ADDRESS DATA
S316
SEND MAP ADDRESS (COMPLEMENTARY MAP DATA)
S317
S318
TERMINATE COMMUNICATION
CHARGING
CAUSE DVD-ROM DRIVE TO READ MAP DATA CORRES. TO MAP DATA ADDRESS
S319
SUPPLY MAP DATA TO NAVIGATION DEVICE
S320
DISPLAY MAP
S321

FIG. 44


INFORMATION ADMINISTRATION SERVER
NAVIGATION TERMINAL DEVICE
ACTIVATE MACHINE
S310
S311
SEND ACCESS SIGNAL
USER AUTHENTICATION
S312
S313
SEND RESPONSE SIGNAL
USER OPERATION
FIND ROUTE TO DESTINATION FROM CURRENT LOCATION
S341
SELECT AREA INCLUDING THAT ROUTE
S342
REQUEST COMPLEMENTARY MAP DATA HAVING PLURAL MESH NOS.
S343
RETRIEVE PLURAL MAP ADDRESS DATA
S344
SEND COMPLEMENTARY MAP DATA REPRESENTING RELATIONSHIP BETWEEN PLURAL MAP ADDRESSES & PLURAL MESH NOS.
S345
STORE RELATIONSHIP IN BUILT-IN MEMORY
S346
S347
TERMINATE COMMUNICATION
CHARGING
OBTAIN CURRENT LOCATION FROM GPS DEVICE
S348
READ MAP DATA ADDRESS HAVING AREA MESH NO. CORERS. TO CURRENT LOCATION
S349
CAUSE DVD-ROM DRIVE TO READ MAP DATA CORRES. TO MAP DATA ADDRESS
S350
SUPPLY MAP DATA TO NAVIGATION DEVICE
S351
DISPLAY MAP
S352